QUEST FOR Quality

Strategies and Applications in Library and Information Services

ILA Seminar Papers
46th All India Library Conference
Ahmedabad, 3-6 January, 2001

Edited by
S.M. DHAWAN

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Foreword

Libraries have been the abode of knowledge in various forms since the beginning of civilisation. Librarians as custodians of documents have been considered as the main disseminators of information for scholarly activities. This role has been very well enacted by librarians over the years and learned persons have considered librarians and libraries as the mainstay for all scholarly pursuits. Documents and information were made available on request by librarians and everybody accepted what they got with great satisfaction and humility.

This scenario has greatly changed since Information Technology took over the arena and made information generation, information management and information dissemination activities the main focus of the modern world. Information became the key word in all aspects of development. As a corollary to this new phenomena, people with skills in different media which generate, process and disseminate information came into the fray. Librarians became a part of this vast information arena and no longer enjoyed the exclusiveness of the yesteryears. Librarians who were used to being the only knowledge brokers, suddenly became aware that they had to compete with another group of people who may not possess the depth and breadth of library holding but surely had access and could disseminate information at the right time to the right user. Users also became gradually aware that there is an alternative to the information supplied by libraries in a much speedier mode. The quality of the information also was judged because the expectations of the user had multiplied.

It is at this juncture that libraries and librarians started facing the challenge to change their age old methods. All of us now have to stop and think about the changes that are required. Libraries have to change

their image from document collections to information managing and disseminating agencies. No longer can users be taken for granted that they will accept what is given in whichever form. The quality factor has become important because the right information has to be given to the right person at the right time in the right form.

ILA addresses this major issue in this Conference and the theme is "Quality Assurance in Library and Information Services: The Need of the hour for Survival". This theme was selected because librarians have to ensure quality in all their activities to withstand the challenge which they face from another group of IT oriented information supplier. The competition is tough but librarians with their basic knowledge about knowledge and information will have to prove themselves worthy of their age old role. The response to our call for papers has been overwhelming and ILA has received 137 abstracts and 122 papers from members residing in different parts of India. Quality assurance perspectives and strategies in different types of libraries have all been addressed through well written papers. The techniques and tools of Total Quality Management, Quality in manpower development and IT-induced Quality assurance in library and information services are some of the major topics covered in this volume. Managing change in library activities to cope with the new environment has also been dealt with by many authors.

This volume has been well edited by a group of competent young librarians under the able guidance of Dr. S.M. Dhawan who is the Editor-in-Chief of this volume. I am sure that the deliberations at the Conference will do justice to all the academic perceptions of the authors and the members of ILA who will participate in the discussions.

I thankfully acknowledge the help extended by all my teammates of the ILA to ensure the high quality of this volume.

SMT. KALPANA DASGUPTA
President, ILA

25.12.2000

Preface

Currently libraries and library professionals are passing through a difficult phase, largely due to denial of academic status to the professionals, indifferent attitude of funding agencies to library needs, and rising apprehensions about their survival in the context of Internet. Since these issues have a direct bearing on the status and identity of the profession, the concern and anxiety about them is natural. These issues did not crop up overnight, and causes for their appearance are indeed several. But surely, somewhere along the line libraries and library professionals have failed to change and come up to users expectations. If libraries have to survive, they will have to change, and inculcate quality culture in their systems and operations, and reorient their services to make them user-centered. To win over the trust to confidence of funding agencies and the parent management, they will have to give value for the money they spend. In short, libraries have no other option but to instill quality in their processing activities, in their services and products, and in their service attitude towards users. In the context of status and identity issues before the profession, the quest for quality is the need of the hour and also a 'mantra' for performance, recognition and excellence.

Recognising the critical importance of quality management approach to reengineering library and information centers, the role it can play in leading the profession and address its status and identity issues, the Indian Library Association decided to organise this present seminar on the theme of "Quality Assurance in Library and Information Services'. It is being held during 3-6 January 2001, at Nirma Institute of Management, Ahmedabad. This seminar is all about quest for quality. It is going to address issues relating to quality assurance in

library and information services. The deliberations will also focus on strategies and applications required to deal with the threats and challenges before the profession.

The objectives of the Seminar are:

- To ascertain the relevance of quality management principles to programmes relating to library and information services;
- To identify strategies and applications for integrating quality in library and information services;
- To ascertain education and training needs and also infrastructure needs of library and information centres for integrating quality in user services;
- To conceptualise and develop criteria for defining and measuring excellence in library and information services; and
- To ascertain quality trends, challenges and opportunities as are relevant to library and information services.

The volume contains 100 papers. Based on issues the authors have raised in the papers and keeping in view the objectives of this Seminar, the papers have been grouped under following ten sections.

- Quality Assurance and its Relevance to Library Services
- Quality Assurance Strategies - Overall Perspectives
- Quality Assurance Strategies - TQM Oriented
- Quality Assurance Strategies - Standards Oriented
- Quality Assurance Strategies - IT Oriented
- Quality Assurance and Manpower Issues
- Quality Assurance Perspectives: Academic Libraries
- Quality Assurance Perspectives: Special and Public Libraries
- Quality Assurance Perspectives: Research
- Managing Change

The section on *Quality Assurance and its Relevance to Library Services* has eight papers. The authors of these papers discuss concepts of quality management, the relevance of quality management principles to library and information services, and how information technology induced quality assurance, in particular, is relevant to libraries and information centres.

The second objective of the Seminar relates to strategies and applications for quality assurance. In all there are 45 papers on this topic. In order that deliberations are meaningful and take place in the

context of the objective under reference, these 45 papers have been regrouped under four sections. These are: *Overall Perspectives on Strategies, TQM Oriented Strategies, Standards Oriented Strategies, and Information Technology Oriented Strategies*. The section on *Quality Assurance Strategies - Overall Perspectives* has eight papers. It gives an overview on strategies as are relevant for integrating quality in library and information services. The section on *Quality Assurance Strategies - TQM Oriented* has 12 papers. The section on *Quality Assurance Strategies – Standards Oriented* has nine papers. In both the sections, the focus is on application of total quality management (TQM) and of standards as a strategy for quality management in libraries and information centres. The section on *Quality Assurance Strategies – Information Technology Oriented* has as many as 16 papers. The papers in this section discuss IT induced quality in the library and information services, IT infrastructure needs of libraries, and how successful has been IT as a strategy for quality management.

For ascertaining education and training needs of libraries and information centres on the subject of quality assurance in library services the papers have been listed under the sixth section *Quality Assurance and Manpower Issues.* In all there are eight papers in it.

For conceptualising and developing criteria for defining quality in library and information services and for ascertaining quality trends, challenges and opportunities it is important that the deliberations take place from perspective of different types of the libraries. The seventh section discusses quality issues from the viewpoint of academic libraries, the eighth from the viewpoint of the special and public libraries, and the ninth from the viewpoint of research studies in LIS. In all there are 32 papers in these three sections. They include case studies of libraries, studies about perceptions and impact of quality assurance strategies, etc. The section on *Quality Assurance Perspectives: Academic Libraries* has fifteen papers. The section on *Quality Assurance Perspectives: Special and Public Libraries* has fourteen papers. The section on *Quality Assurance Perspectives: Research Studies* has three papers. This section looks at quality trends in research studies in library and information science.

The last section is on *Managing Change*. The purpose of having this section has been to come up with guidelines useful in drawing up an action plan for libraries and information centres for integrating quality. This section has seven papers.

The volume has an alphabetical index of authors, of key concepts discussed in the papers. Sh. S. Majumdar, Dy Librarian, IIPA, New Delhi and an Associate Editor of this volume has prepared the index at a short notice. I would like to record my deep appreciation of the work done by him and to all Associate Editors in bringing out this volume in a record time. I also record my deep appreciation to all the authors for their contributions and for conceptualising issues on the theme of the Seminar for discussion. I hope the Indian Library Association will draw up an action plan based on deliberations. I will be failing in my duty if I do not acknowledge the unflinching cooperation and relenless support extended by Sh Sunil Dutt in the editorial work of this volume. The printer also deserves special thanks for undertaking the job meticulously. Every effort has been made to keep the text of the volume error free. There could still be certain errors. These certainly are not deliberate and the responsibility lies on us. My special thanks are due to Smt. Kalpana Dasgupta, President, ILA for reposing confidence in me and giving me the opportunity for editing this volume.

Delhi
25th December 2000

S. M. DHAWAN
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2

Relevance of Quality Assurance in Library

K.C. GANGULY

ABSTRACT

The paper focuses on the relevance of quality assurance in libraries. The author points out that one must recognise that implementing quality assurance system within any library can not be compared to solving a set of equation. Implementation requires perseverance, commitment, team work, planning and artfulness.

1. THE GENESIS

The present day libraries have become multimedia savvy due to adoption of technological advances and changing nature of their services. If we look into past, we find that our libraries have tremendously transformed themselves to merge into present technological environment. It is a fact that almost all types of libraries are involved today in a process of revolutionary change. It seems that 'computer age,' which has already dawned, would show more transforming effect on the library.

2. CHANGING CONCEPT OF LIBRARY

The goal of the early library was to store and preserve the recorded knowledge in various formats. The information contained in such document was strictly for few privileged users than for dissemination to all. Librarians were more concerned with making heritage of knowledge more accessible to their readers and were less concerned with problems of preservation, communication of right information to right reader expeditiously through various methods and media.

3. INFORMATION EXPLOSION AND ITS IMPACT ON LIBRARY

The information explosion has its greatest impact in the field of science and technology. It has created some problems as well:

(*a*) It is impossible for any individual reader to comprehensively scan even a part of published information in his specific field.

(*b*) Since no single library can afford to acquire each and every published document, readers have to depend upon the resources of other libraries.

(*c*) Consequent to the growth of literature there is parallel growth of secondary sources such as bibliographies, indexing and abstracting journals and computer based large retrieval systems.

(*d*) Increase in acquisition of non-book *i.e.* non-conventional material by the libraries.

In order to cope up with these problems, information centres and libraries have to drastically modify their information handling techniques and their working methods. The information users are also required to change their approach for acquiring information. Some of the solutions are:

(*a*) Adoption of more efficient techniques for recording, processing, retrieving and disseminating information.

(*b*) Co-operative sharing of resources among information centres and libraries has become a vital necessity. No single library can fulfil demands of their clientele with existing resources on ownership basis. They have to share resources with other libraries, co-operative sharing can avoid unnecessary duplication of efforts by co-ordinating the systems and services.

(*c*) Individuals who are involved in the information transfer process *i.e.* information specialists and users have to radically modify their behaviour and habits. Today librarians and information officers have access to new sophisticated methods to enable them to co-operate even at international level and consequently the need is for qualified persons in these specialised areas. Traditional image of the librarian is no longer valid. Now, he requires a good knowledge of many fields.

4. DEVELOPMENT OF INFORMATION TECHNOLOGY

The post industrial period has brought considerable advances and innovations in technology. As a result many new inter disciplinary fields have emerged, and information technology is one of them.

Applications of new information technology, as far as library is concerned, can be grouped into following three main areas:

(*a*) Introduction of computing power into wide spectrum of information handling process. The development of microelectronic components which are small, compact, cheap and reliable makes it possible to integrate computing power at much reduced cost.

(*b*) Convergence of telecommunications and computer systems facilitated by a number of technological developments is very useful for message transmission.

(*c*) Development of wide range of equipment capable to bring office automation. Microelectronics allows for the development of highly complex distributed processing system which can support the integrated office. Now office equipment allows an individual worker to test his skills, reduce repetitive work and show quantity as well as quality in his output.

Information technology is being used in advanced countries to its fullest extent. 'Information age' which was a vision in the recent past has become a reality and is growing very fast, 'paperless libraries' and 'paperless offices' are already in vogue.

The present day need is how speedily and efficiently information could be communicated to the users. Unless libraries actively keep pace with the information revolution and needs of emerging information society, there is a danger of these being considered obsolete and becoming history.

5. INFORMATION SYSTEMS

An information system is a system involved with all aspects of handing information. Bibliographic retrieval is concerned with the processing of available books and documents. In many situations even the most advanced bibliographic retrieval system will not satisfy the user's needs. A system capable of pulling together many different but related resources would obviously expand the user's knowledge of a

given problem by supplying with a particular piece of information as well as the context for this information. The ultimate information system is thus often conceived as a network of different information facilities including bibliographic retrieval, database management, data analysis, citation, indexing and text processing systems.

6. VALUE OF INFORMATION SYSTEMS

Science and technology has been and will also remain prime stimulus for the advancement and development of any society. The phenomenal progress achieved by the leading nations of the world in various spheres, more particularly in the period following World War II has been primarily due to the new impetus given to the application of science and technology.

While the objective of science is to discover scientific truths, its profitable application to economical pursuit belongs to the realm of technology. Science and technology are very closely linked and have been the backbone of the progress of developed nations. Developing nations aspiring for progress are also fast adopting science and technology. The effective utilisation of science and technology needs effective dissemination of information.

Information is POWER, the power to help in decision-making, and that too correctly and expeditously. It is a power of co-operation, collaboration, power of PEACE. This power needs proper utilisation, for furthering the goals of the nations. It should neither be monpolised nor misused.

The amount of information published every year, makes it impossible for any library to collect, organise and disseminate it to the potential users manually. To handle this vast store of information, computers with large storage capabilities, with its accuracy and reliability high processing speed and quick retrieval, are needed. By using this effective tool it has been possible for information scientists to control information and make it available on time to the decision makers, to achieve their goals.

7. INFORMATION SERVICE AND INFRASTRUCTURE

Libraries, information centres and systems continue to be important components of an information infrastructure which carry a heavy responsibility to select and organise information, so that the relevant

information could be disseminated to the concerned users in an efficient and effective manner.

8. USER NEEDS

It is almost impossible to generalise while assessing user need. To understand variety and complexity of their needs the concerned libraries and information centres should get in touch with users, either individually or in groups and also conduct studies about their information needs. It can, however, be safely generalised that library and information needs are felt at all levels, regardless of an individual's location, social status or level of intellectual achievement. Although library and information services and needs are not the same in different parts of a country or the world as a whole, and though they vary widely among people by age, educational achievements, profession, geographic location and by several other factors yet most people feel dependence on their libraries for the availability of relevant and useful information.

In order to provide efficient information services as well as to bring about the required and desired changes, the role of the professional manpower working in these libraries and information centres would be really crucial. In this country, fortunately the need for suitably qualified manpower has been duly recognised. With the expansion and development of libraries, the need for emphasis in teaching, 'information service' has been well accepted.

10. CONCLUSION

Fundamental changes are taking place in the outlook of libraries, in the way the users are facing the emerging information age and the old traditions and concepts are undergoing a sea change owing to the electronic industrial revolution. The World-wide thrust on humanising technology with metaphysical implications may strike the roots of human intelligence graced by nature. Pragmatic view of the relationship between technology and culture is inevitable.

5. EVALUATION AND ASSESSMENT IN CONTEXT TO BENCHMARKING : A CASE STUDY OF THE NITIE LIBRARY EXPERIENCE

We realised about 7 years ago when we acquired the library management software that indexing and providing multiple key term access to our users would be very useful.

We next decided to ask our user clientele (faculty, staff, and students) what their expectations were. Unanimously we were told that just getting the class no. and author title was not sufficient for retrieval. They wanted to compare by subjects etc. They also wanted us to use terms, which occurred in the article/book itself, and they were averse to go through a select list of key terms supplied to them to get to know the class no. or book/journal details. We then decided to start our service by having user satisfaction as our benchmark. Our next step was to follow some method to give the keywords. We conducted a study on the numerous books, used daily at the circulation counter. Broad subject headings as outlined in DDC 19th edition were chosen. We proceeded to make a list of keywords from sears list of subject headings which pertain to subjects covered by Industrial Engineering. We started the process of data entry of books with each book having 6–10 key terms selected by the data entry operator while reading the contents page etc.

Hence as advised by them earlier we started giving keywords from the books, chapters from books etc. and soon we built a database of more than 5000 key terms. Each one of these terms is uniquely linked to the class nos. of the book and very soon a network of terms was developed for each set of classification numbers. This was highly appreciated by our users.

Once we decided to go with the suggestion of the users we received a lot of praise and goodwill from them. From January 2000 we have started similarly article indexing of the core journals (about 80) in our Library and have built up a database of more than 700 articles. This too has been appreciated a lot. Here also we decided to follow similar steps as done in books indexing.

Our customers are very happy and have enjoyed using the search and other facilities we offer via our computerised catalog. They are extremely happy that the library has bridged the gap between customer perception and librarian perception. Now the question arises

have we done right or wrong? We ask ourselves this question in terms of quality management and find that we have many questions which are still unanswered, to name a few:

> If an author uses different terms to express himself *i.e.* synonymous terms or subjects which have different terms meaning the same etc. In such cases we have used the guideline to give both the terms. This way our search results improved a lot. But point to be noted here is that these terms need to be typed repeatedly for each and every book and our library has more than 45,000 books.

Due to the fact that we started this system from day one of our computerisation project we were able to accomplish this feat.

Another important factor to note is that there is no standard method of giving these key words. So have we sacrificed the quality of indexing. To our mind no. We have only provided innumerable keywords to increase access.

We are now trying out numerous options in doing the same in a simpler method. We want to prepare a network link between the numerous keywords and class numbers in the future. That will reduce our indexing efforts considerably. That would be the final step in our benchmarking process of analysing, adapting and improving.

6. EVALUATION AND ASSESSMENT

The library and the information science professionals have continuously worked at improving their services, they have accepted the need to keep user (customer) satisfaction as their primary goal. In most cases this is achieved in a case to case method, depending on the inter personal relationships between the librarian and the user. The time has now come with the aid of information technology to wake up to new challenges. We have to learn to bridge the perception gap of quality between the user and the Librarian. We also should undertake research projects in large numbers to analyse the contents of our collection and device fast and automatic indexing tools. We should also learn to accept that key terms should be provided from the angle a user retrieves information. Hence the modern methods like datamining and neural networking techniques should be used to develop these tools by academic libraries and special libraries.

7. CONCLUSION

Quality management in libraries will be fulfilled if we used our standard tools to develop and update the methods on content analysis of information. The dual advantage would be that we would automatically develop an automatic indexing and classification tool. The authority file, which is a very valuable tool in classification, can be revived using Information technology tools.

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6

Information Services: Survival Through Technology Induced Quality Assurance

V. VENKATARAMANA AND N. VARATHA RAJAN

ABSTRACT

How many revolutionary or next generation technologies do we get to hear about every day? It is more important to know them. A major change in products or technology could become useful to free and manage better library's different operating system (OS) platforms, Internet and Intranets. This paper inquires how the software should simplify and manage all the library's digital resources—through the powers of change.

1. INTRODUCTION

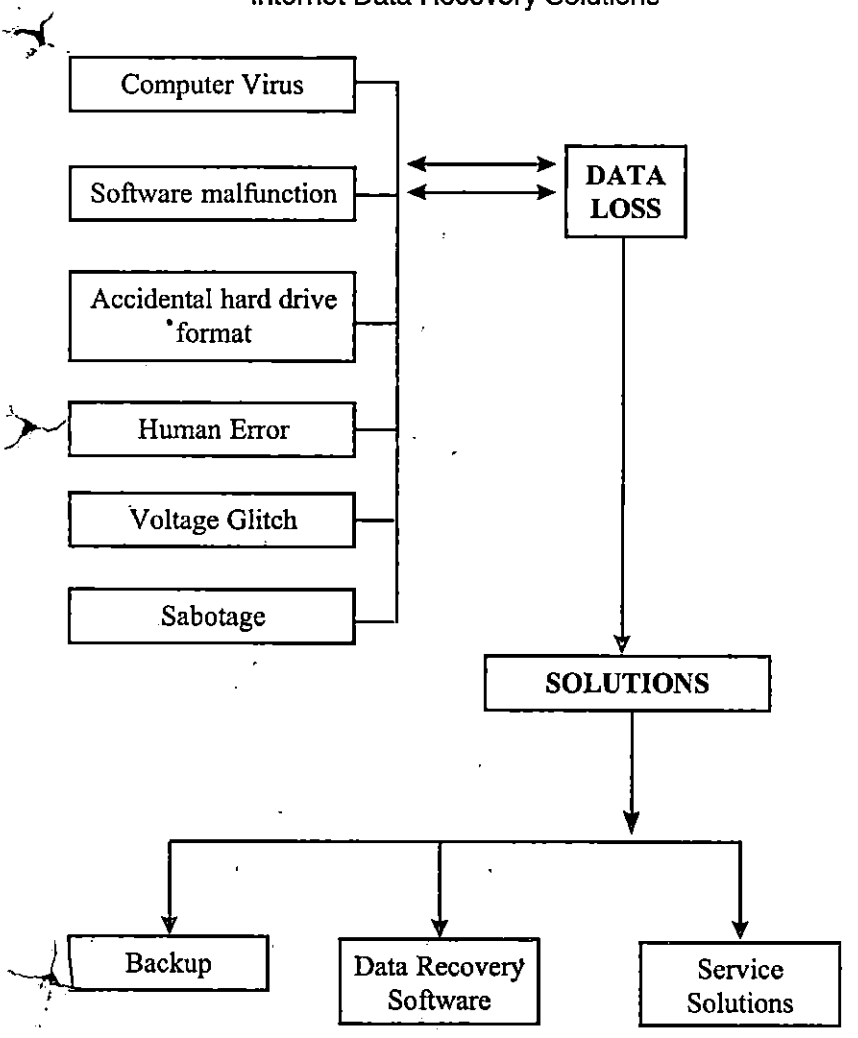
Globalisation of information system means greater competition for efficiency and greater opportunity to serve the user community. The widespread and ever growing information world has wider choices from user community and the information scientist should invariably try harder to stay on top to maximise the potential information utilisation. This is largely dependent on the usage of quality products, which are the reflections of envisaged services—of course, much of the quality depends on the budget alone. For the past decade, technologies have been serving the institutions and much is needed to edge the win with the growing information technology. The Internet, WINDOWS 95, the palmpilot, the cell phone and MP3—just these five items are repeated again and again in one form or the other despite the so-called revolutionary next generation technology. To everyone's knowledge, everyday's list would surely not exceed five in number?

Actually one should not worry too much, chances are that an event of such magnitude won't happen overnight. The Internet took over 40 years to reach where it is today. WINDOWS went through many modifications before 1995 version came out. PDA were around for many years before the PALM finally took off. Cell phones were bulky encumbrances used only by a few, for many years, and MP3 took a couple of years to become the industry threatening rage it is today. The wiseman should always guess the trick of the trade for marketing their products and envisage the next big turning point.

2. INFORMATION PANORAMA

Data, as everyone of us knows—are the most critical and invaluable asset of any information centre. The task being—one should manage to get it, access it and protect it. Data are to be managed in a such a way to make these available across the unwired channels. Its service is to be administered through reliable Information Technology (IT), which should deliver advanced functionality and unsurpassed reliability to any environment—say from a single server to a global enterprise.

Hitherto, the information centre's services used to be typical and almost identical with that of other similar centres. But now the environment has changed the whole information world and necessitated demanding solutions through customised modern storage and retrieval management strategy. The dramatic development in the automation world envisages, instant application, protection, enhanced performance, research oriented data management, non-stop system and information availability and technology functional storage area networks. As such the information scientist should choose the essentials of storage management. Today, system downtime is simply unacceptable. The information manager has to redefine the essentials of storage management to include backup of open files, automated disaster recovery, multi-platform support and 'light out' operation with support for automated hardware technologies. The information necessarily be protected for data management and avoid the risk factors for any possible mishap leading to breakdown—which the information seeker should not be exposed to infinitely. One should attempt to employ the latest Microprocessor Digital Technology and make the system extremely handy, incredibly compact and highly reliable.

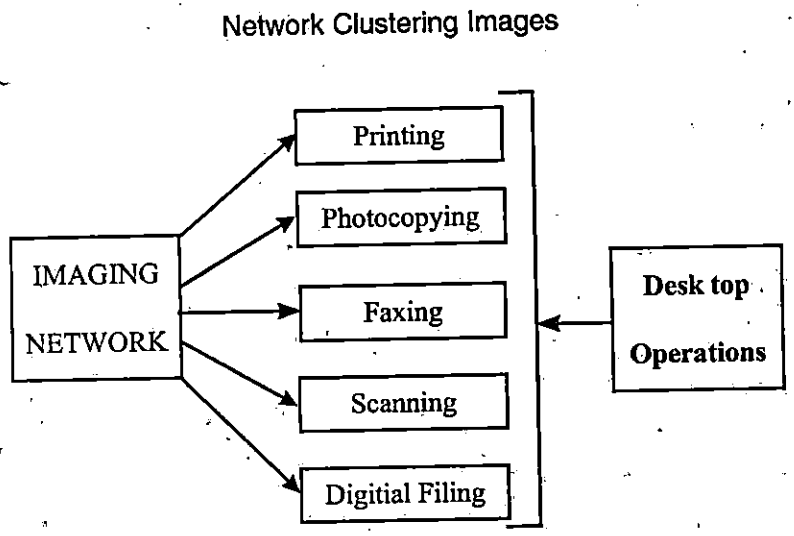


It is obligatory on the management that all the PC data has to protect and insure its information potential from Internet viruses, system crashes and human errors. We never know when a disaster or accident will strike data—so we should plan and insure data by backing it up and keeping it safe by means of tested and proven systems on drives and discs.

3. THE PROCESS

Buying quality is an art and making the information centre as a state-of-art centre is a speciality. Possessing and managing a power-packed quality information centre demands combination of investment, performance and necessarily depends on quality and assured service. The University of Hyderabad library has been on the forefront in the automation process of the information assets—with the liberal support from the university administration both financially and active participation by the user community—say the students, research scholars, faculty, and various scientists from all corners of India. Besides developing comprehensive database of books, back volumes of journals, current journals, research reports, dissertations and theses etc., the user clientele is being facilitated to several access points in the library premises to process their educational, research and scientific endeavours by means of free Internet access PCs. Not only extensive library materials, various resources around the globe are available through free Internet, these facilities are paving the right direction to a more congenial research environment. The additional facility being electronic journal subscription and accessibility over several thousands of journals including back issues to the user community. The faculty fraternity, has an established, efficient, need based LAN extended to all the schools and departments and disciplines. It provides unlimited accessibility over the scientific literature published around the globe through the library portals—by means of dynamic and dedicated Internet facility. All this globalisation task has become possible with the dedicated staff and aptly supported in all the information seeking and scientific endeavors of the academic community with dynamic and most appropriate administrative support by the Vice-chancellor to update the hardware and software acquisitions to efficiently support the cause of scientific research activity.

The dynamic functions of Internet have been facilitating the downloading of extensive information by means of network imaging and consequently several time-consuming processes have been transformed into magnificent manifestations, such as printing, photocopying, faxing, scanning, digital filing etc. All these multifaceted functions are carried out in scheduled time frame, simultaneously and directly from the desktop operations. The versatile Internet and its captivity gained momentum to ever-growing and developed software tools at reasonable costs for the enrichment of the mankind.



4. CYBERCAFE FRAMEWORK

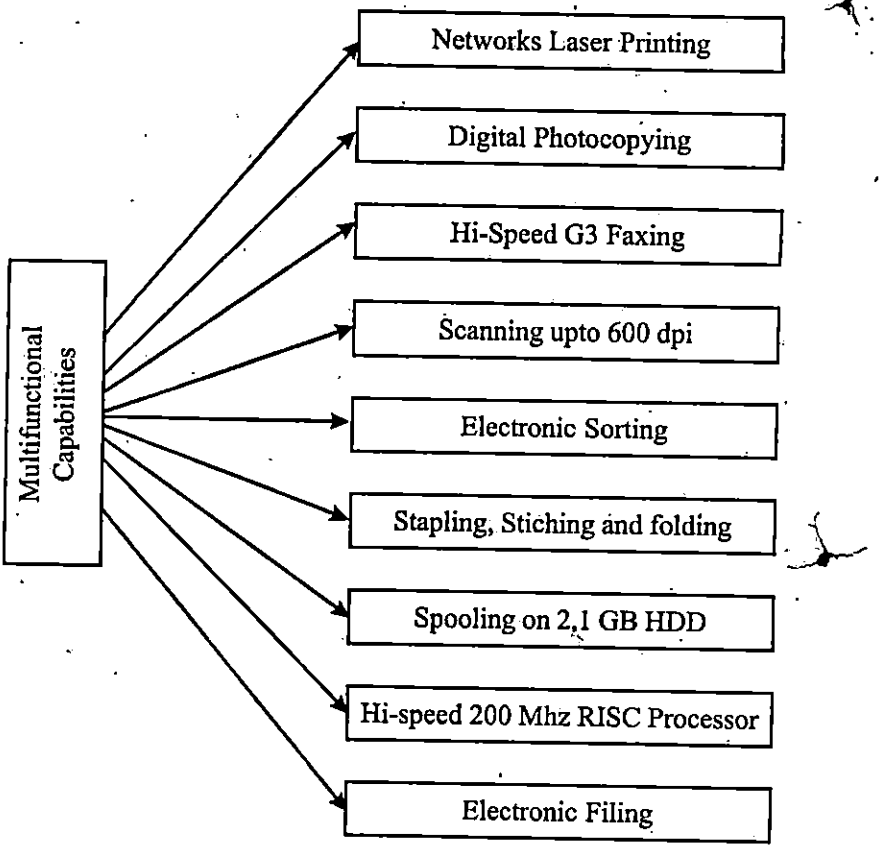
One has to make sure that all forms of communication, requests and responses are handled in a smooth manner through appropriate protocols as a major consideration—while developing Internet applications. The new core framework is a framing mechanism that allows peer to peer exchanges of requests and responses. Blocks of new protocol frameworks are deployed which form the framing mechanism and permit multiplexing and multiple, simultaneous and independent exchange of information to meet the day to day published as well as unpublished documents to the scientific community.

It is the age of integration of intelligent technologies with numerous systems including the ever-growing Internet. The days of passive products and dumb computing are numbered. *Deepleap* is a newly developed technology that represents recent developments made along these lines. In short, *Deepleap* is the browsing assistant. Through an easy and intuitive online installation procedure, any one can add a Java-script based button into the brower's links. In fact, it is not really an installation, actually it runs on the server of the website. The system sends information to the server, thus providing number of tools for assistance.

5. THE REVOLUTION

The innovations and development in the electronic world are bringing novel products everyday and one such product is the revolutionary document solution projected below. The multifunctional features include direct laser printing through downtime programming, digital photocopying for instant elucidations. Hi-speed faxing facility, issue-based sorting to meet the time to time demands and concurrent electronic filing of events, texts and the like but, alas, how many institutions/ information centres can afford to acquire the latest products? Not even ten per cent of the institutions in India can manage to get and

REVOLUTIONARY DOCUMENT SOLUTIONS



continue to update their infrastructure with sound maintenance at all times of operation. This is the pace of newly developing products and the managers of information centres/libraries should get themselves exposed on to the new products and ensure even the passive user community should also be stimulated to the untamed information potential through the skills and novelties of information retrieval—using gadgets on hand.

6. CONCLUSION

Information retrieval and access for scientific endeavours hitherto was moving at a slow pace despite the automation activity of the library resources. The resource potential and its multifaceted utility transformed into a magnificent world, whereby even the passive user is also activated and forced to tune on the developing innovative information potential. Several new gadgets and software have already made their thrust on the information centres. The half-hearted user is also driven to such a magnifying arena wherefrom no one can look backwards. The dynamic and ever changing panorama of information and its utilisation is heading for the enrichment of the society and mankind as well. The information manager has to get himself exposed to the new technological developments from time to time. He should prove effective in his communication to the user community so that no one could ignore him or his information world.

7

Not a Licence to Kill: Barriers to Quality Assurance in Library and Information Services

N.M. MALWAD AND M. ANJANAPPA

ABSTRACT

A librarian has to overcome a number of barriers in providing quality library and information services. An effort is made to discuss a few major barriers such as administrative, management, library committee, classification and cataloguing, human beings, acquisition and infrastructure. It is recommended that the barriers should not be considered as a licence created by the authorities to kill the enthusiasm, initiative and creativity of a librarian.

1. INTRODUCTION

Recently we read the book entitled, *Not a Licence to Kill: Police needs paradigm-shift.* by Rajendra Shekar, former Director of the Central Bureau of Investigation. The author advocates a paradigm-shift to serve rather than a licence to kill. We were very much fascinated by the impressive title and approach and thus framed the title of our paper using the most catchy words. We acknowledge this.[1]

There are a variety of libraries, academic, special and public of various sizes, large, medium and small catering to information needs of different users including layman, a student, a scholar, a research scientist, an engineer, a consultant and a top manager. A library could belong to a private or public undertaking, a charity, a research organisation, an educational institute, a governmental department, or a professional association. The librarian has to cope with problems and decisions that range from staffing, recruitment, training to budget monitoring, acquiring needbased documents, organising information,

public relations, servicing and serving information. In all these activities there are a number of barriers which the librarian has to encounter and overcome. The librarian has to take these barriers as challenges to improve his or her knowledge and skills to serve more effectively. The barriers are not to be considered as a licence created by the bosses to kill the enthusiasm and spirit of the librarian.[2]

In this paper we try to summarise a few major barriers a librarian encounters and grapples with.

2. ADMINISTRATIVE BARRIERS

The administrative barriers may arise due to ignorance or less familiarity with the rules and procedures followed in the organisation. The librarian may be ignorant or the administrative clerk may interpret the rules in different way. The changes in dealing clerks or staff may also create problems of interpretation differently. The disposal of files may take more time than required. [Please see Annexure-I]

Audit and accounts are the two most powerful units which according to many librarians, frustrate them. The audit and accounts are generally there to safeguard the interests of the organisation and to ensure that the specifications, technicality, and rules are followed consistently throughtout the organisation. They are also check invoices to, bills, rupee conversion and the prices of documents, books, etc. It is there job to raise objections when rules are not followed and it is the librarian's job to give explanations and clarifications in respect of the objections. The librarian should not treat these as barriers or hurdles but as challenges to improve his work effectively.

3. MANAGEMENT

Librarians may come across barriers due to policy of the management. For example, the general policy of the management is not to recruit additional staff and no vacancies to be filled in. The librarian will find it very difficult to cope with the increasing demands of users, ever-growing library collections, emerging new services due to computerisation and accesses to electronic media. The librarian needs more staff and it is not provided due to policy of the management.

It has been noticed that more than fifty per cent of posts for university librarians are lying vacant in India. Consequently, such

libraries are managed by deputy librarians or in some cases by senior assistant librarians. The worst thing is that, many a times the management asks a faculty member who is otherwise not so busy in academic work and research pursuits, to head the library. These arrangements are initially supposed to be temporary but in reality continue for several years or indefinitly. As a result the professionally qualified and experienced library professionals do not get opportunity and become frustrated. One can find such examples in many universities and research organisations where the professional staff is being almost killed by this barrier.

4. LIBRARY COMMITTEE

A library committee is generally constituted with members from different disciplines to advise the library in policy matters and to solve the problems faced by the library. But it has been experienced that the committee is less a democratic forum for assessment, critical evaluation, appreciation and support for the growth of library facilities and more a place for discussing such trivial matters as non availability of a specific book or journal, rude behavior of the library staff member or a blanket charge of library being thoroughly inefficient unit.[5] At times, the chairman of the library committee being a powerful person being closer to the authorities tries to push down his decisions however whimsical they may be, from the point of view of the library. In some cases, the chairman acts as a super librarian knowing every thing about the library and making the librarian a dummy clerk. How often we have seen in special committees and library conferences that such library committee chairmen represent the libraries particularly, from IITs, and some Government research departments in India.

5. CLASSIFICATION AND CATALOGUING

Classification schemes generally cannot cope with the ever increasing knowledge. Emergence of new subjects and fusion of subjects further add to complexity. The latest book being classified in scientific field cannot normally get an appropriate class number from the old classification scheme. The revision of classification schemes are published after a certain period, but how many libraries can afford to buy costly new editions as and when they are published? The barriers in

classification also are due to human factors. The understanding of the subject and the rules at a given time by a classifier and cataloguer being inconsistent to classification and cataloguing.

The efficiency of library service depends upon three factors, namely, classification scheme used, the efficiency of library attendant to arrange and re-arrange the books on shelves, and frequency of rectification that, how many times the arranged shelf is checked.

Classification and cataloguing help the librarian. But the library user feels that the artificial language of coded class numbers is a barrier. User also finds barriers such as library terminology (*e.g.* charging/discharging) similarly, classification scheme (*e.g.* ordinal values assigned to punctuation marks), catalogue cards (*e.g.* the layout and indention, even at times writing of surname first, open access and broken arrangement (*e.g.* a library keeps all proceedings of Geneva conferences on peaceful uses of atomic energy, at a separate place in the library)

To overcome such barriers faced by users the librarian has to organise user orientation programmes and user training programmes.

6. HUMAN BEINGS

A library is a service oriented organisation. It has library staff, users, administrators, managers and librarian himself as human beings. Human beings are the most complex and unpredictable in behavior. They have emotions, ego, prestige, pride, ambitions and likes and dislikes. A librarian faces a major barrier in management of library in understanding the human nature. The management peers have suggested the following principles to deal with human beings: "respect", "autonomy", "donot harm", "benefit others", "be just" and "be faithful".[6]

Respect: To recognise that all individuals have the right to think their own way and to act in the ways that they feel are the best.

Autonomy: To value the opinion of others, their knowledge, their feelings, their needs, their pride and prejudices,

'Do not harm': To avoid an activity that can harm others, hurt feelings, aroise anger and damage self-esteem.

'Benefit others': To help staff members in developing their abilities, their capabilities to their fullest potential

'Be Just': To give objective equitable assessment of performance of

library staff and to consider that all human beings are of equal worth, so that there are no barriers, derived from gender, origin of state, language spoken, skin colour, social status, political alliance or any other arbitrary distinction.

'Be faitful': To avoid discussing about aspect of an employee's behavior or personal life that are not job related.

The barriers from human beings, the librarian has to face include users as well. It is necessary to remember that libraries exist to serve users. The users are students, faculty, research scholars, doctors, engineers, scientists, managers, decision makers, government officials, directors and even the lowest cadre staff. The users are always demanding and their information needs are normally urgent. The librarian must clearly understand his users and their psychology. If users are not satisfied, a librarian's career is almost doomed.

7. COLLECTIONS

A library is judged by the collection it holds and services it offers. Keeping the collection up-to-date, useful and need-based is a challenge for a librarian, particularly when the funds are not sufficient. The barriers in collection development can be growth of collection, identifying and selecting need-based documents, obsolescence of documents, weeding out documents, creating and maintaining dormitories of not very useful documents, dealing with duplicate issues of periodicals, unwanted trade catalogues, publisher catalogues, old news-papers and popular magazines, etc. Without a clear weeding out and disposal policy, librarian cannot fulfil his duties. The junk collection becomes a major hurdle in the overall look and image of the library and in providing efficient services.

While acquiring documents some authorities insist on quotations and bargain for discounts. The Good Offices Committees guidelines are thrown to wind.

8. INFRASTRUCTURE

Many a time, libraries are housed as per the administrator's decision, in a room, in a hall, in a corner of building or in a building. The existing space is not always sufficient to cope with growing collection and increasing user community. It is difficult to locate, relocate,

arrange and re-arrange library collections when the library place is shifted. At times, the given building is inconvenient for arranging library racks and creating sufficient reading place, because of already existing walls, columns and other fixed elements of the building. Space constraint has been a barrier for the librarians for a long time. However, due to information technology development and access to digital resources the future librarians perhaps may not come across the barrier of space constraint.

For an old library existing for more than 20 years, the available old furniture including reading tables and chairs is a counstraint. The same is the case with old equipment. Typewriters have been replaced by personal computers but how often we can afford to replace old PCs with new ones? Replacement of equipment and struggle to get funds for the purpose is a major hurdle in giving a up-to-date look to the library.

Use of information technology in libraries is desirable, advisable and really useful. Here also a librarian has to overcome barriers such as full retrospective conversion of manual library catalogue, selection of suitable library management software package, customisation of the package, providing Internet access at more and more terminals in the library, coping with increasing demands for more time of access for e-mail and downloading, providing adequate bandwidth for multimedia interactive facility, giving adequate knowledge and training in using the computer terminal effectively, filtering information retrieved from a large gamut of information, evaluating information, assessing the utility of retrieved information for purpose in hand and such other problems.[4]

9. CONCLUSION

The five laws of library science are:

Books are for use
Every reader his book
Every book its reader
Save the time of reader
Library is a growing organism

The Implementation of these laws illustrates a variety of barriers. Dr. Ranganathan in his classic book, "*Five laws of library science*" has

enumerated several such barriers and has suggested how these should be taken as challenges to improve the library, its services and the image and status of the librarian.[2]

We have briefly discussed a few major barriers such as administrative, management, library committee, classification and cataloguing, human beings, collection and infrastructure. The suggestion is to tackle the barriers, hurdles, objections, and accusations as challenges.

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ANNEXURE—I

A TYPICAL CASE OF FILE MOVEMENT

[Name of the library, the authority and the dates are omitted and just the main path of the file movement is traced]

Request to authorities for financial grant.

Grant sanctioning letter received.

Requesting authorities for a permission to utilise the grant for the specific purchase justifying need and usefulness in the library.

Constitution of a special committee to identify specific purchase as per guidelines.

Meeting of the special committee. Decision to call quotations and make enquiries with vendors.

Quotations were called and preparation of the comparative statement.

Second meeting was called to discuss the problems for implementing the project. More quotations needed as per rule.

Again quotations were called from more number of firms. A few firms responded. The lower quotations were considered.

Comparative statement prepared and submitted to the authority.

The short listed firms called for discussions requesting to resubmit revised quotations with the latest specifications.

One firm selected. On the advice of the authorities further negotiations made.

The final draft statement was placed before the committee for approval.

The committee did not approve and raised a few objections and constituted a sub-committee to check the irregularities.

After approval order was placed.

The payment was held up due to objections from Audit and accounts.

The clarification and explanation was placed before the committee.

Finally the material received and payment was made.

3

Quality Assurance Concepts in Library and Information Services

V.M. BORKAR

ABSTRACT

The paper explains the concept of quality and quality assurance—philosophy of librarianship and quality assurance. An open system model of the library is analysed and synthesised. New modified system to fulfil the expectations of the external environment and impact of information technology on library and information centres have been discussed. It concludes that a library system needs to be analysed periodically for quality evaluation and assurance

1. INTRODUCTION

Quality is an attribute, a characteristic or a trait like value, it is imperceptible. A.R. Sethi (1987) says that "Quality is associative with time, place, environment and the people. A quality product or a quality service in one milieu or environment may not necessarily be a quality product or a quality service in another. Similarly one cannot impose one's own notion of quality"[1]

2. QUALITY ASSURANCE

S. A. Sherlekar (1997) describes the concept in relation with the enterprise.[2] He says that "the quality assurance governs the ultimate fate of the enterprise in the market. No firm or organisation can exist merely through promotion. Only through continuous managing for best quality (market perceived quality) the firm can maintain bright product / brand image in the costomer's mind in a competitive market.

Japan and Germany have emerged as business leaders today only through quality assurance and Total Quality Management (TQM)."

Fortunately, organisations now realise that quality assurance and TQM mean a sweeping renewal of a firm's entire organisation culture, a complete change in the philosophy of organisation, and unswerving commitment to continuous improvement towards excellence or perfection. Quality product needs quality mind. Continuously taking small steps in improvements will be the key for perfection and will lead to long term success.

J.L. Riggs (1979) says that "Today quality control is taking on the emphasis of quality assurance—the means to achieving true product reliability. Reliability cannot be inspected into a product; it must be designed and built in."

3. QUALITY ASSURANCE IN LIBRARIES

Taking into consideration the field of library and information services the quality means zero redundancy. It can also be said that the product or the service provided by the library or by the information centre is fit for use, or for consumption, for pleasure or for creation of new information/knowledge. The reliability of information, its relevance, accuracy and precision are important.

The quality assurance is the phenomenon which has national importance. The quality of national development depends upon the quality of citizens (human resources). The quality of human resource of a nation depends upon the quality of education. Quality library services play significant role in quality education and research. Everybody, in India and all over the world is concious regarding importance of information.

4. PHILOSOPHY OF LIBRARIANSHIP AND QUALITY ASSURANCE

Philosophy of librarianship has assured quality services since a century. The contribution of various thinkers Melvil Dewey, Dr. S.R. Ranganathan, C.A. Cutter etc. from Library Science have established standards for quality library services. Five laws of Library Science, various classification schemes, canons of classification and cataloguing, preparing bibliographies etc. have came into being for establishing quality and uniform services.

The concept of book, reader, time and organisation structure has changed and got relevant meaning in new millennium. We use the new concepts like document, information, information seeker instead of book, knowledge and reader. M.P. Satija (1987) says that "Information has a value only in context of time. Scientific information is cummulative in structure, rapidly making the earlier information obsolete. The rate of obsolence of information is too high. Information is unstable, to say in other words – in the world of information, value and time are locked in an inverse relation equation".[3]

5. LIBRARY AS AN ORGANISATION

V.M. Borkar (1989) says that "Managing a library requires the same basic skills as managing any other type of organisation. But one of the most important features of a library that distinguishes it, from many other organisations relates to the fact that it is not-for-profit organisation".[4] Generally we measure the status of an organisation in terms of profit but a library's profit is its prompt and excellent service.

The library and information services are now being provided on commercial basis. In this age of information technology (IT) information industry or knowledge industry is not only service organisation but also profit making organisation. Library and information centres are paid for.

We know that the library is a social organisation. M.M. Kashyap defined it as "an assemblage of interrelated, interdependent and interacting functional components (or socio-technical subsystems) comprising of men, money, materials, methods, procedures, ideas, information technology etc., established and unified by human design to form a coherent whole designed, to provied opportunities of independent learning and thinking to men or to meet the information needs of the people, and is encompassed by its supra social system."[5]

6. AN OPEN SYSTEM MODEL OF THE LIBRARY

An open system of an organisation takes the energy in the form of inputs out of the external environment to work the system efficiently. The managerial skills and functions transform the inputs available to it by some kind of throughputs into outputs.

7. ANALYSIS OF THE LIBRARY AS A SYSTEM

A system approach is an operational concept. It is the process of studying existing system, finding out the problems and developing new and modified system. The purpose of the system approach is to optimise outcomes by making the best possible and effective utilisation of existing and anticipated resources.

T.A. Ryan (1985) has implemented two major functions in the system approach.[6] They are:

- Analysing existing system
- Synthesise new modified system

7.1 Analysing Existing System

When existing library system is analysed, the system manager (Librarian) should take into consideration the following aspects:

- The philosophy of librarianship
- Standards of librarianship
- Change in the external environment
- Expectations of the users from the library
- New inputs to replace existing one
- Knowing obsolete elements of existing system
- Analyse the system considering SWOT

7.1.1 Dr. Ranganathan and many other library scientists have defined all the activities and services, explained motivation behind each law of library science and succeded in establishing Library Science as a separate discipline in the univese of knowledge. Every action and activity has certain procedure. The philosophy of librarianship is a vital and live force since a century. The spirit of the philosophy of librarianship should be observed positively when the system is analysed. IT is a combination of computers, communications and graphic technologies etc. It is occupping every walk of life. Library and information profession is not exception to it. IT says that "save the time of everybody " while Dr. Ranganathan's philosophy says that "save the time of reader." This is the proper time for offering justice to the philosophy of Dr. Ranganathan

7.1.2 Standards of Librarianship

Standards play an important role in the life of each discipline. Library

Science as a discipline and knowledge management system is internationally accepted phenomena. With the explosion of knowledge existing standards should be sufficient for the purpose. Multi-disciplinary nature of knowledge and explosion of knowledge are posing challenges to library and information centres. World bibliographical control is the need of research and development. Standards (common formats) for communication of information should be compulsory.

7.1.3 Change in External Environment

IT plays an important role in economic, social, political, family, individual day-to-day life of human beings in the world. Pinpointed services within zero minutes is the requirement of the environment

7.1.4 Expectations of the User from the Library

New media from IT are changing the face of the new millennium libraries, because of the advent of the Internet, virtual libraries can be a threat to the existance of the traditional libraries. Adoption of IT services through various media are expected by user of the library to meet their information needs.

- Multimedia services
- e-mail
- voice-mail
- Discussion groups
- Bulletin board
- Chat sessions
- Online references
- Web pages

7.1.5 New Inputs to Replace Existing One

The services like circulation, fine calculation, issuing reminders to users, indexing of books and journals etc. were depending on manpower in traditional librarianship. Proper combination of manpower and machine is necessary for effective and efficient output.

7.1.6 Knowing Obsolescent Elements and Services of the Existing System

Due to new developments and research several elements, techniques, processes, services proved obsolescent. *e.g.* with the explosion of knowledge and interdisciplinary nature of the knowledge classifica-

tion systems proved inadequate. Personal views should not be allowed to fix position of a particular book in relation to other books. So online standard classification system should be in use everywhere in the world.

7.1.7 SWOT Analysis

The manager (librarian) should know the Strangths, Weaknesses, Opportunities and Threats (SWOT) of the library system. Strangths and Opportunities include available resources of library; these should be used effectively. Weaknesses and Threats include lack of adequate resources, changing environment and uncertainty about future.

7.2 Modified System

The two activities—an analysis of existing system and the design of new or modified system, are integrally related. The results of analysing the existing system and identifying problems in that system should provide the basis for designing a new modified system. In the process of designing new system the elements in the existing system are identified and separated to study each one individually. The relationships among these elements are determined, on the other hand, synthesis involves the identification of elements in the existing system which the designer wants to include in the new modified system. Then the determination of the relationship is to be established and maintained among these elements. Moreover, the actual combination of the elements is to be made in such a way as to produce the new modified system.

Taking into consideration the aspects of the analysis library system should be equiped with modern equipments to the support of manpower. Conventional organisation structure of the library system need to be analysed. The analysis needs to classify the structure into two groups:

7.2.1 Services with the Document and Processingg of the Information

- Books
- Periodicals
- Non-book material
- Contributing your own web

7.2.2 Services with the User

- Circulation
- Reprographic services
- Access to internet
- Reference service and information service

8. CONCLUSION

(*i*) Library as an open system must consider the aims and objectives of its supra-system.

(*ii*) Periodically the library system needs to be analysed considering the changes in the environment

(*iii*) To survive in future, TQM is needed in the library and information centre

(*iv*) Available (already in the system) resources should be used effectively.

(*v*) Use effectively new media and techniques of IT and synthesise new modified system for quality services

(*vi*) Reliable information with accuracy, speed and spending zero time is the essence of quality assurance.

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1

Quality Assurance in Library and Information Services

SHANKAR B. NELOGAL

ABSTRACT

Meaning and definitions of quality have been studied in this paper and need of quality assurance in Library and Information Services in the present environment has been examined. The views expressed by library professionals and information scientists as regard to quality assurance in library and information centres have been studied and explained. Factors influencing the quality assurance in the context of LIS are described. As the quality assurance in LIS is a herculean task the necessity of clubbing the ideas from different library professionals and the library associations have been highlighted.

1. INTRODUCTION

Quality is the predominant endeavour of almost every organisation. Whether it is a manufacturing industry or a service unit, quality assurance is receiving proper attention. In the international market only those products and services, which meet sell international standards. The present era of industrialisation, liberalisation and globalisation fixes the standards for industrial products and services, be they are from a manufacturing unit, an educational institution, a financial institution, an insurance company, a political organisation, a hospital or an individual profession. The quality standards, besides keeping the authorities serious about quality, also help the ultimate users at competitive prices. Library and information centres and the personnel working there should give total care and attention to assure quality in services they provide to users. They should develop and inculcate the necessary skills for the purpose.

2. MEANING OF QUALITY

Quality is

- Adherence to laid down standards for the product.
- Satisfying customer's specific needs for the products.
- Durability or reliability of the product.
- Dimensional requirements of the products.
- Aesthetic requirements of the product.
- Statutory requirements of the product.
- Functional requirements of the product.
- Safety requirements.
- Consistency of the product.
- Meeting BIS standards of the product.
- Fitness for use or fitness for purpose for the product[1]

In simple words quality is fitness for use or fitness for purpose. It is fitness for use at a perceived value. For a customer it is value for money. Thus, quality is the gap or difference between customer's specific requirements (*i.e.* fitness for use) and manufacturer's economic process capability so that the product can be made available at an affordable price. Thus, quality has to be built rather than inspected.

3. DEFINITION OF QUALITY

Different authorities have defined the term quality in different ways.[2]

(*i*) Quality is often used to signify excellence of product or service[2]

(*ii*) Fitness for purpose of use — *Juran.*

(*iii*) The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or simplified needs— BS4778, 1987 (ISO 8402, 1986), Quality Vocabulary: Part I international terms.

(*iv*) Quality should be aimed at the needs of the customer, present and future—*Deming.*

(*v*) The total composite product and services, characteristics of marketing, manufacture and maintenance through which

the product and service in use will meet the expectation—*Feighcnbaum.*[3]

(*vi*) Conformance to requirements.

3.1 Absolutes of quality

There are four absolutes of the term quality;

(*i*) *Definition:* Quality means conformance to requirements, not goodness.

(*ii*) *System:* Quality is produced through preventive actions, not detection.

(*iii*) *Performance Standard:* Quality comes from zero defect, not from acceptable quality levels.

(*iv*) *Measurements:* Quality is measured by price of non-conformance and the complete transactions ratings (CTR), not statistical computations.[4]

We must recognise the need to include the true requirements of the 'customer,' the need and expectations in the assessment of quality. Quality then is simply meeting the customer requirements and this has been expressed in many ways by different authors.

Quality management is an act of deliberately creating an organisation culture within which all transactions are completed correctly and all relationships are successful.

To achieve quality in organisation in general and library and information centres in particular, each person in the quality chain must interrogate at every interface.

In quality assurance process, customers and suppliers play a dominant role. Therefore, it is necessary to know some of the important aspects of customers and suppliers.

3.2 Customers

- Who are my immediate customers?
- What are their true requirements?
- How do I or can I find out what the requirements are?
- How can I measure my ability to meet the requirements (If not, then what must change to improve the capability?)
- Do I continually meet the requirements? (If not then, what prevents this from happening, if the capability exists?)
- How do I monitor changes in the requirements?

3.3 Suppliers

- Who are my immediate suppliers?
- What are my true requirements?
- How do I communicate my requirements?
- Do my suppliers have capability to measure and meet the requirement?
- How do I inform them of changes in the requirements?

Each person in the organisation must realise that the suppliers' needs and expectations must be respected if the requirements are to be fully satisfied.

Library and information services are to be reviewed keeping in mind the requirements of the ultimate customer, the user. We may classify users or customers as internal and external.

3.4 Internal Customer

It is obvious that an organisation has both internal and external customers. Internal customers are those who do a particular job in the quality assurance process and the responsibility of that job rests with them. In library operation, there are various sections through which different jobs are carried out. For example, record creation, cataloguing, circulation services and the answering of the enquiry. The employees of these sections interact with each other within the library. So, each one working in a particular section are customers (users) for another section. The employees of one section should take care of employee of another section to obtain a better result to achieve the organisational goals which, in turn, will help to serve the end users as per their requirements.

3.5 External Customer

We may consider users as external customer in library and information centers. The work done within the library with the interaction of all the concerned would help to serve the external customer. For example, cataloguing, classification, indexing and abstracting, answering query are all internal jobs of internal customer which ultimately are going to serve and benefit the external customer. The quality of service always depends on the quality of job done by all the internal customers. In order to know the requirements of external customers, the internal customers should study the exact requirements of the former.

4. PROBLEMS IN QUALITY ASSURANCE IN LIS

The quality assurance in LIS encounters some problems, as the quality concept is basically an origin of manufacturing industry. The opinions of the library professionals and information scientists expressed during TQM conference in the 1992 Library Technology Fair are as follows:

- apparent incoherence due the number of concepts, many of which appear to be conflicting;
- confusing definitions and approaches;
- the transfer of quality management to service industry contexts forms its manufacturing industry base;
- the lack of training in quality management techniques;
- little advice on where to start;
- the apparently high cost of implementing quality initiatives;
- the difficulty in measuring quality in libraries;
- the bad press arising from text which presents it as a cure all when it is patently obvious that it is a long haul; and
- the idea that quality management is a passing fad, so it can be ignored.

While the above problems have been expressed by a set of library professionals, there is equal divergence regarding the 'best way' of implementing quality in LIS. Many library professionals have shown considerable interest in quality management and quality assurance in library and information services. There is always a possibility of increasing the quality of service by taking keen interest and developing relevant skills and by creating a congenial atmosphere. The quality benefits the end user which, in turn, benefits library and information centers in the long run.

5. QUALITY ASSURANCE IN LIBRARY AND INFORMATION SERVICES

The present scenario compells library professionals to shift from the traditional form of library practices to the one which delivers the best of services conforming to the user requirements. 'User is the king' who decides the future of the library profession. If he/she is not satisfied with the library services, will certainly look for an alternative

even at a higher price for better service wherever it is available. Therefore, user is the main determinant of the standard for quality of services in library and information centres. We have to change our style of working at any cost to deliver the best goods.

The goodwill or reputation of an organisation in general and LIS in particular is built by quality, reliability, delivery and price, with quality being perhaps the most important of these competitive weapons. LIS can 'delight' their customers by consistently meeting their requirements and achieve a reputation for excellence.

There are a series of internal suppliers and customers in almost all organisations. They are called 'quality chains', the core of a total quality approach and organisation excellence. In the process of quality chain, a set of inputs get transferred into the desired outputs. In every organisation, there are some core processes which must be performed especially well if the vision and mission are to be achieved. For example, the library cataloguing and classification processes establishe the true requirements for producing best quality service, thereby satisfying the ultimate library users. These must be communicated properly by the organisation.

An enormous amount of research has been done into the needs of individuals by library and information services. A large number of studies have been published. Individual services likewise have profiled their user populations, and some have used sophisticated instruments such as geographical information systems for public libraries.

6. FACTORS INFLUENCING QUALITY ASSURANCE IN LIS

The quality and reputation of an organisation depends to a large extent on the staff. The key to quality assurance in services is planning and systematic activities supported by technical data.[5]

The main elements involved in LIS in quality assurance are setting standards based on the identification of user requirement and the design of the service and system to achieve these consistently without error.

There are various factors that influence the process of quality assurance in manufacturing industry and service units. They are as follows.

(*i*) Resources.

Identification of individual process and detailed planning and operation instructions should be made available. A new process has to be identified with the findings of review, if an existing process does not meet the present requirements.

(*viii*) Products and Services

In manufacturing process the products can be seen and touched where it is easy to understand the process mechanism of input-process-output. Whereas, in service processes, it is somewhat difficult to understand the process. As library and information centers fall in service category, a keen observation of even minute problems may help to find out the solutions. The library staff should foster a friendly atmosphere so that the users may straightway inform any improvements to be made. A suggestion box will also help in this regard.

(*ix*) Use of Products and Services

A particular product, after getting final touches will go for use in any quality managed company as per the customer requirements. If it does not meet the one, it has to be improved next time taking into consideration the users requirements. In libraries actual delivery of services and their use takes place at the same time in majority of the cases. For example, a user in an information center uses audio-visual materials after receiving them from the library staff. There is a very short period between supply of material and their being put to use by the receiver. The library staff should act very quickly in case a reader complains of any defects in the audio-visual material he has used.

(*x*) Inspection and Test

There is a drastic change in the method of inspection of products and services between manufacturing industry and service organisations. In manufacturing industry a product can be inspected and tested against the specification at various stages. If there is any defect it will be rectified by concerned staff and the corrective measures are taken to avoid such things in future. Coming to library and information services inspection and testing is possible in a number of ways. Customers test the service at every transaction. They need not report the result of service provided by the library to the library staff. In such cases libraries can conduct the users study and receive the written suggestion, which can be analysed for improvement.

(*xi*) Conformance to Requirements

Services and products should conform to the specific requirement of the customers. It is easy to produce nuts and bolts in an industry as per the standards and specifications. Working instructions, standards, specifications are helpful in this regard. In library services, cataloguing rules, classification schemes, abstracting and indexing conventions are tools through which library documents are processed for providing services to its end users.

(*xii*) Zero Defect

In service context zero defects means the service provided should exactly meet the customer requirements. In LIS it is interpreted as users being able to borrow the documents they require at the time they require, or the information supplied being accurate cent per cent of the time, or the service being delivered in a courteous and friendly manner every time and the books on shelves being arranged exactly as described in the catalogue.

(*xiii*) Non-Conformance Control

It is a standard set to identify the products and services that have not been meeting the specific requirements. This is helpful to keep track of the defective products and services and to prevent them from reaching the ultimate customers. It is easy to identify non-conformance in LIS.

(*xiv*) Corrective Action

Corrective actions are necessary in LIS to ensure that the mistakes once committed are not repeated next time. The mistake may be small or big. It should be rectified to satisfy the customers during the next transaction.

(*xv*) Continuous Assessment and Improvement

Continuous assessment and improvement of services would help retain the existing customer and also to attract new customers. The library users always look for an improved system in getting the services because of time constraint. The library staff should be prepared to develop and implement the new techniques in providing the right information at right time as others may be waiting for using that particular information in their decision-making process.

(*ii*) Vendor appraisal.
(*iii*) Vendor rating.
(*iv*) Purchasing documents.
(*v*) Isolating input resources.
(*vi*) Process activities.
(*vii*) Process control.
(*viii*) Products and services.
(*ix*) Use of products and services.
(*x*) Inspection and Test.
(*xi*) Conformance to requirements.
(*xii*) Zero defects.
(*xiii*) Non-conformance control.
(*xiv*) Corrective action.
(*xv*) Continuous assessment and improvement.
(*xvi*) Performance measurement and quality.
(*xvii*) Evaluative studies.
(*xviii*) Value added models.

Let us discuss the above factors one by one.

(*i*) Resources

It is obvious that the resources used in the quality process are the determinants of quality of the service rendered. Utmost care has to be taken to select and apply the required resources for respective jobs. For example; to answer a query of a reader of any type the library staff should be equipped with necessary reference materials like dictionaries, directories and encyclopaedias.

(*ii*) Vender Appraisal

It is quite natural that library and information centers approach various suppliers for their requirements. We may select a supplier on the basis of the reputation which can be known by third party accreditation or by making evaluative visits to the supplier.

(*iii*) Vendor Rating

Existing suppliers can supply the same products. Their performance can be scored according to the importance. This can be done by quality rating, conformance to specification, reliability, price rating and delivery rating.

(*iv*) Purchasing Documents

These are the important records which tell the quality and standards of suppliers. The documents of last 2-3 years may be referred for selecting the best among the available suppliers.

(*v*) Isolating Input Resources

Inspection of the materials should be carried out before their being put to use with process activities. The sampling method can be used if the material is in bulk quality. The specialised staff should look after this activity. Continuous inspection of the resource by the experts would ensure better services.

(*vi*) Process Activities

Following are the main attributes of process activities in sustained quality assurance

- Choose the process—based on identified areas for improvement and determine its scope.
- Choose the process sponsor—at the appropriate management level, and the process scheme—based on the involvement in the process.
- Choose an outside facilitator—possibly a customer of or supplier to the process or an external facilitator.
- Decide on the title of the process and the purpose of process.
- Determine the current level of performance of the process.
- Identify the level of performance required for the process (also compare with best performance of a competitor or other outside company if possible/desirable.
- Flow chart the sub-processes, activities and tasks.
- Determine and implement an action plan for process improvement or re-engineering.
- Measure the results and continuously improve the process.

The library and information centres use information, materials, and equipment, personal and professional skills for producing service to users. Continuous monitoring is a must for all these inputs as far as their efficiency is concerned.

(*vii*) Process Control

Process control is the most important aspect in quality assurance.

(*xvi*) Performance Measurement and Quality

After fixing the performance requirements and their implementation in the work process the next step is performance measurement. Performance indicators need to be linked to organisational goals. The main aim of measuring quality is to ascertain whether quality concepts have been applied effectively and whether requirements have been met fully. We should concentrate on the key elements as identified by users and staff. It is to be noted that the performance measurement can relate both service performance and staff performance.

(*xvii*) Evaluative Studies

These studies examine the existing library and information products and services to evolve standards of performance and measuring yardsticks for efficiency of information retrieval systems, database and network.

(*xviii*) Value Added Models

These models have been evolved methods for improving the quality of information from the stage of data to information and knowledge. Values are added at every stage of information processing to get the best quality of output *i.e.*, the knowledge.

8. CONCLUSION

Quality cannot be assured overnight in LIS. It is a task which involves team efforts. The existing manpower should be given necessary training. To motivate the information professionals, human resource development programmes should be adopted. Courses in information and technology, quality circles, quality assurance, participative management and technical writings could be planned and offered. The course curricula should be updated so as to produce the new brand of library professionals.

Library associations should strive hard to bring a set of models in improving the quality of services in different libraries and information centres. They will have to take stock of all the existing practices for services. If necessary, surveys and case studies should be conducted to get relevant inputs to study the problems in library and information services and the corrective measures should be taken to improve the quality of services in library and information services so as to survive in this fast changing world.

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4

Quality Control in Library and Information Centres: A Systematic Approach

B.S. BIRADAR AND ANITHA S.

ABSTRACT

Quality control is a system of continuous improvement, it is a journey and not a 'destination'. Quality must become a way of life. Everyone should struggle continuously to improve all products and services, the aim should be to achieve hundred per cent satisfaction of customers. Authors have made an attempt to illustrate factors for quality assessment, quality requirements of the customers, and guiding principles for quality control.

1. INTRODUCTION

In today's marketplace companies are driven by the customer needs and expectations. It is the company's responsibility to deliver product or services that satisfy the customers. In the ideal situation, the features, advantages and benefits of the company's product fit the customers' expectations. When this occurs, the company has no problem in successfully marketing its products, resulting in high levels of satisfaction for the customer and higher profits for the company.

The actual situation is often very different. When a company's product does not match the customer expectations, the product does not sell. This forces the company to use marketing gimmicks to move the product. Some available options are:

- offer rebates
- increase sale commissions
- advertise the product/service

- examine the quality of product/service
- develop public relation

The organisations like social welfare, banking, insurance, libraries and information centres, etc. are also expected to provide services acceptable to customers or users to their fullest satisfaction, but the technique used by library and information centres (LIC) to meet the needs of the users are different than the technique used by a manufacturing company. In this paper, an attempt has been made to illustrate the various factors and techniques or methods used to assess the quality of library and information centres' products and services.

2. DEFINITION OF QUALITY

Feigenbaum (1983), a key writer on quality management said "Quality is the total composite product and service characteristics of marketing, engineering, manufacture and maintenance through which the product and service in use will meet the expectation of the customer".[1]

The Ford motor company used the following definition (as quoted in Lascelles and Dale, 1993) "Quality is defined by customer. The Customer wants products and services that throughout their life meet his or her needs and expectations at a cost that represents value".[2]

3. FACTORS FOR ASSESSING THE QUALITY

The following factors would be considered to assess the quality of library and information science products/services.

Quality: Was it what user wanted? Was it relevant?

Time: Was it supplied in time?

Cost: Was it cost effective in terms of material cost and staff time? Ford (1989) suggests that it might be instructive to compare the time spent in getting a document with the time spent using it.

Further, based on the above three major factors, the following components of information system would also be considered to assess the quality of information products/services.

- Size of stock and additions of new books
- Percentage of book(s) per member

- Percentage of budget spent on particular items: books, periodicals, staff, furniture, etc.
- Number of users visit per day
- Number of potential users
- Number of queries and searches
- Number of ILL and reservations
- Various information services
- Opening hours
- Study of user needs
- Observations etc.

4. QUALITY CHARACTERISTICS

Quite a large number of quality characteristics can bring mainly under two broad headings.

(*i*) Systems quality
(*ii*) Behavioural quality

(*a*) *Systems Quality*

The following quality characteristics are generally expected by the customers from library and information centres (LICs)

(*i*) Reliability;
(*ii*) Up-to-dateness;
(*iii*) Timeliness;
(*iv*) Error free;
(*v*) Currency;
(*vi*) Exhaustiveness;
(*vii*) Customisation;
(*viii*) Precision;
(*ix*) Presentatbility; and
(*x*) Nascency;

(b) Behavioural Quality

Inter-personal relationship exists between the provider of the information service (staff or the LICs) and the seekers of information. This demands certain quality and characteristics to be displayed by the professional staff. They are as follows:

(*i*) Hospitality;
(*ii*) Friendliness;

(*iii*) Courtesy;
(*iv*) Care;
(*v*) Concern;
(*vi*) Helpfulness;
(*vii*) Patience; and
(*viii*) Tactfulness.

5. APPROACH TO QUALITY CONTROL

For controlling the quality, Curzon (1989)[3] suggested a sequence of steps for planning, implementing and evaluation.

(*a*) *Conceptualising:* developing awareness and envisioning the change.
(*b*) *Preparing:* getting the organisation ready for change, for example by listening to staff, but being committed to the change.
(*c*) *Organising the planning group:* selecting staff to participate and building them in to a team.
(*d*) *Planning:* examining options, deciding on goals and objectives and then developing a plan.
(*e*) *Deciding:* evaluating the options, deliberating and the then making a decision.
(*f*) *Managing the individual:* discussing the change, dealing with reactions to it, then monitoring its implementation.
(*g*) *Controlling resistance:* identifying resistance, analysing its source and counteracting it.
(*h*) *Implementing:* formal introduction of the change at the right time and then following it through.
(*i*) Evaluating: re-examining the goals, identifying problems and making adjustments.

Tann (1993)[4] suggested, in a paper concerned with the application of the ISO 9000 quality assurance standard to libraries would include:

- Knowing the customer's needs—stated and/or implied;
- Designing a service to meet them on or off the premises;
- Faultless delivery of service;
- Suitable facilities—car park, café, library, creche;
- Good accommodation—seating, lighting, heating, toilets;
- Good house keeping;
- Reliable equipment—computers, videos;

- Efficient administration—welcome, queries, answered efficiently and effectively;
- Helpful, courteous staff;
- Efficient backup service;
- Monitoring and evaluation including customer expectations, complaints, recommendations for improvement; and
- Feedback loops to build-in improvement procedures and/or checking that improvements are put in place.

Oakland (1989) describes 13 steps for total quality management.[5]

(*a*) Understanding quality;
(*b*) Commitment to quality;
(*c*) Policy on quality;
(*d*) Organisation for quality;
(*e*) Measurement of the cost of quality;
(*f*) Planning for quality;
(*g*) Design for quality;
(*h*) System for quality;
(*i*) Capability for quality;
(*j*) Control of quality;
(*k*) Team work for quality;
(*l*) Training for quality; and
(*m*) Implementation of TQM

6. BARRIERS TO QUALITY CONTROL

(*a*) Lack of encouragement from top management;
(*b*) Lack of long term commitment;
(*c*) Lack of leadership;
(*d*) Soft attitude of top library officers;
(*e*) Unwillingness to share hidden and intangible factors;
(*f*) Barriers between sections and departments; and
(*g*) Lack of demand for quality services.

7. CONCLUSION

TQM is based on the idea that in every part of the organisation quality must become a way of life, the natural way to do things. Everyone will

work continuously to improve all the products and services. Their ultimate aim is 100 per cent satisfaction of customers. To achieve the same, library manager and supporting staff are required to bring the following core ideas in to practice.

(*a*) It requires total commitment by senior management and by the whole staff, over the long term.
(*b*) It involves total dedication to meeting customers' requirements
(*c*) It is based on team work and partnerships and seek to break down inter-departmental or sectional barriers and replace confrontation with co-operation and partnership.
(*d*) Regular reviews of their products/services
(*e*) Quality involves a long term commitment to training and development for all staff.
(*f*) Regular reviews of the training and development needs of all employees.

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8

Quality Management and Benchmarking Applications in Library and Information Science

CHITRA P. RAO

ABSTRACT

The present paper deals with some important areas which were identified by a benchmarking exercise in a huge library catering to the requirements of an institute of national repute.

1. INTRODUCTION

Every product is a package of services and a solution for meeting some requirements. So is the case with library. It is as an entity, a mechanism to quench the thirst for knowledge, a solution for meeting the information and awareness needs of its customers. Its customer base includes students, learned scholars, teachers, and also executives from industries. Meeting the ever increasing knowledge requirements of this customer base is not as easy as it seems. In most developed countries today the libraries enjoy the status of knowledge centres. Unfortunately the same cannot be said for a developing country like ours, where libraries are still linked as an extension of the academic institute and do not enjoy the status of a knowledge centre. In an era where computers and IT are increasing their penetration the role and dimensions of the library is also changing rapidly. Question arises whether our libraries are really prepared and geared up for this change?

Libraries are after all information providing service centres where quality of service is of utmost importance. Similarly the quality of the human resources who manage these knowledge centres are of equal

importance. In such an environment the quality of our human resources becomes sublimely important because to a large extent evaluation of quality management in library depends on them.

Tenner and De Toro (1992) have put forth three principles for total quality management: (*i*) Customer Focus; (*ii*) Process improvement; (*iii*) Total improvement

To achieve the objective of continuous improvement in quality the value of library and information professionals is significant. The following attributes are deemed essential to achieve total quality in services.

(*i*) Leadership; (*ii*) Education and Training; (*iii*) A Supportive Structure; (*iv*) Communications; (*v*) Reward and Recognition; (*vi*) Measurement.

One realises that nearly all libraries and information centres do have the above six requirements in varying measures but they have not taken up the challenge of total quality. Since early seventies numerous quality Gurus have put forth the definitions for quality, Given below is one such definition by A.V. Feigenbaum (1991).[1] He is considered as one of the key writers on quality management:

> [Quality is] The total composite product and services characteristics of marketing, engineering, manufacture and maintenance through which the product and service in use will meet the expectations of the customer.

Ford Motor company used the following definition (quoted in Lascelles and Dale, 1993)[2]

> The customer defines quality. The customer wants products and services that throughout their life meet his or her needs and expectations at a cost that represents value.

2. DILEMMA OF CHANGE

The quality of library operations extend to include the commitment and skills of all staff from senior management to the most junior, understanding the needs of all library users as well as having right collection and its easy access. The success depends on the chain of quality, the library being as strong or as weak as its links. The library quality chain extends from the library suppliers through each stage of

library activities until the user leaves the library fully satisfied, with the collected information. The interaction of the staff with the library user is the inseparable part. The library may provide excellent service on most occasions, but users who receive even one isolated unsavory experience will change their perception of the library. So staff training is of primary importance towards managing the quality of library service. Effective leadership is one of the primary driving force in maintaining quality.

The library also has to accept and fulfill its role by providing total user satisfaction if we have to emerge as a quality service provider. This basically means designing the best product for our user! How can this be possible?

Let us now examine the current status of library and information management in terms of:

- Information as a product
- Technical services performed (behind the scene)
- The perception of the user towards our services

3. CURRENT ISSUES AND PROBLEMS IN LIBRARY AND INFORMATION SERVICES

3.1 Standardisation (Classification Tools)

Libraries have chosen standard schemes of for library technical services (classification and the cataloguing). These form the backbone of any library. Here one of the main problems faced universally is the problem of specificity, *i.e.* accuracy of classification, especially while classifying inter-deciplanary subjects. Today many Library software packages have made our task simpler but as yet we have not included the relevance and importance of having an online authority file for easy operations for the classifier. This is definitely one of the hindrances for classification and hence it will reflect poorly on the quality of this service.

3.2 Standardisation (Cataloging Tools)

Alternately the methods used for cataloging by following the AACR or any other tool the slipups after use of Computers is minimal, because the process of cataloging was easier to standardise than classification. Apart from the issue of authorship while cataloging we rarely

face a problem in automation. Here the use of software has helped our services a lot. We are now able to boast of online catalogue access to our users all the hours of the day, across the campus etc. We must understand here that this was possible due to the support our profession received from field. Library management using packaged Software and the process of computerisation is possible mainly due to the efforts of the IT professionals. Has the LIS profession improved after learning to use the computer? What have the professionals contributed to make the user more satisfied? This question is yet to be answered.

3.3 Indexing

Following the above line of thought let us now examine the service called Indexing, provided in different ways by LIS staff to users. Here too there are standards, the Sears List, Library of Congress subject headings list etc. Most of us follow one of these standard resources. We claim to have indexed our books very efficiently. Let us now examine the journals, how many libraries index articles from the journals that they receive, do they use the document processing software and methods or do it in different ways? Who assigns the key words to these articles etc? Has the user expressed his dismay or happiness while using the library and while searching from journals?

3.4 Perception Gap

One of the most important findings has been the PERCEPTION GAP, meaning the expectation of user as quality service and its understanding by the library staff. The most important feedback about this gap which we received was that: *what the user terms as keywords and what we assign as keywords while indexing is vastly different from their perception of keywords.* We have to cross this bridge to reach the user at the other end. What does this essentially translate into! It translates to mean that the terms users use to retrieve information do not coincide with the terms we use while indexing.

This perception difference was due to the gap in terms used *e.g.* like terms used in literature and the colloquial language. Though the meaning is the same the words used to express them differ. The need to bridge this perception gap between users and the professionals is the need of the hour. If we now examine our day to day functioning

we will realise that each and every library has attempted to overcome this in numerous ways.

It is sad but true that libraries often do not customise the services for the user but exactly the opposite. The user learns the library operations and customises himself to the effective use of the library. Fundamentally this has to now change if the quality imperative has to be met.

There has to be a paradigm shift from our administration intensive functions to quality intensive ones. Content analysis and information analysis in terms of computerisation should take precedence over administrative computerisation.

4. BENCHMARKING AND TOTAL QUALITY MANAGEMENT

Benchmarking is one of the quality management tools designed to help organisations improve their products and services and to assist in the management of change. Benchmarking helps one in learning about one's own organisation and in comparison to others.

For the library professionals the relevance and importance of benchmarking is very high. Against whom or what do we benchmark? One of simplest exercise is that of the user's perception of quality service from the library. The framework of benchmarking exercise is described as a process.

4.1 The Process of Benchmarking

(*i*) *Getting Started Involves:* Planning, Organizing, Managing for Benchmarking

(*ii*) *Preparing to Benchmark:* Identify key processes, form team, understand the processes

(*iii*) *Conducting Research:* Collect Information, Who's Best? What to ask?

(*iv*) *Selecting whom to Benchmark:* Establish relationship, Plan to collect & share Information

(*v*) *Collecting and Sharing Information:* Surveys, Site visits, Determine any third parties

(*vi*) *Analysing Adapting and Improving:* Compare data, Plan to surpass, Implement and monitor, Improve

5

Relevance of Information Technology in The Quality Assurance of Library and Information Services

N. GANGADHARA REDDY

ABSTRACT

Information Technology will shape the future information world. Computers process information and telecommunication technology disseminates information. So, both of these technologies are to be used effectively in library and information environment to provide quality assurance in the library and information services. Computer technology is much useful in the library automation, and telecommunication technology in the construction of information networks, Internet services (Electronic resources, Databases, WWW, E-mail, Chat, and Online services).

This paper highlights the basic information technology (IT) concepts, TQM, ISO9000 certified libraries, IT application to achieve Total Quality Management and to provide quality assurance in information services.

1. INTRODUCTION

For many years library used to be treated as the storehouse of books and the librarian merely a custodian of stored books. But these days the entire situation has totally changed due to various developments including IT application in libraries. Accordingly, a library is now treated as the centre for creation and recreation of information activities and products for academic pursuits. Presently, libraries are not only involved in the collection, processing, storage, retrieval, dissemination and distribution of knowledge, but also using the most modern and sophisticated electronic tools to accurate and timely techniques of information handling and also exploiting various electronic

information resources including CD-ROMs and on-line databases for the satisfaction of users.

The above said developments have totally changed the traditional roles and responsibilities of libraries around the world. Presently, most of the libraries are trying to get and provide quality assurance services by using information technologies.

2. INFORMATION TECHNOLOGY

The term information technology is a recent and comprehensive term. The term 'information technology' in English, 'Informatique' in French 'Informatika' in Russian encompass the notation of information handling. In its strictest sense, it is a new science of collecting, storing, processing and transmitting recorded information.

The word 'Information Technology' is a combination of two words. One is 'Information' and the other is 'Technology'. Information means knowledge, it can be a bit or a page. In addition, dictionary definition of 'Technology' is the systematic application of scientific and other organised knowledge, skills to practical tasks by the use of computers and communication.

3. TOTAL QUALITY MANAGEMENT

Total Quality Management is concerned with the integration of all efforts in the organisation towards quality and customer care. According to ISO definitions TQM is "a management approach of an organisation centered on quality, based on participation of all its members and aiming at long term success through customer satisfaction and benefits to all members of the organisation and to society'.

According to Joseph and Berk (1995), continuous improvement, prevention rather than detecting defects, customer focus and universal responsibility are four basic elements of Total Quality Management.

3.1 Benefits of TQM for Libraries

(*i*) Users will be satisfied and better treated.
(*ii*) Excellence in library services will be achieved.
(*iii*) Excellent documentation of systems and procedures will be possible.

(*iv*) Substantial improvement in interpersonal relations will be visible.

(*v*) New organisational climate will be generated.

(*vi*) Respect for system will be generated and users can see continuous improvement in the services and;

(*vii*) Employees will develop sense of belonging, which will ensure more involvement.

3.2 Pre-Requisites of Standardisation and Quality in Libraries

Standardisation is the process of establishing engineering criteria by common agreement, terms, principles and equipment. These are in a layman's language sort of rules for running a particular organisation/ institution. These standards are only the guidelines and not a penuche to quality. Standards lay down the basic frame work for smooth execution of the functioning of an organisational set up. Hence they ensure good quality of service, to satisfy the needs of the user/reader and help us in identifying some problem areas in the library. Standardisations helps in establishing better communication between the reader and the library in terms of services. While quality implies the satisfaction of the reader, the librarian/information officer should identify readers' requirements and set certain goals to be achieved, thus reducing dissatisfaction of the readers. To achieve these goals and quality in service to the readers some rules *e.g.*, ISO 9001 can be applied to the library and information profession.

ISO 9001 Required

- Need based system analysis of the services provided/likely to be provided as per the culture of the organisation
- Provide adequate resources (*i.e.*, reference tools/material to be available)
- Trained personnel capable of carrying out the processes.

4. RELEVANCE OF QUALITY ASSURANCE IN LIBRARY SERVICES

Information technology and its application are being widely used by all sectors for the optimum improvement of the organisation. Thid is no exception to the library and information services. Following are

some of the areas of key concern for a library where librarian can play a vital role to keep pace with the changing IT environment. It will achieve the "information for all" and "user satisfaction at optimum level". Finally it leads the library to become Total Quality Management and quality assurance service center.

The information technologies that are relevant to libraries mainly cover the following:

Computer technology

- Database organisation and management
- Library management operations

Library technologies

- Classification
- Cataloguing/Indexing
- Database creation
- CAS
- SDI

Communication technologies

- Library networks
- Information networks

Reprographic technologies

- Photography
- Microfilms
- Optical/Digital
- Audio/Video

Technical communication technologies

- Technical writing
- Editing
- Publishing

The IT is applied in three ways to achieve quality assurance services in libraries,

(*i*) Library automation
(*ii*) Information storage and retrieval
(*iii*) Internet services and information networks

4.1 Library Automation

Automation has helped libraries in improving operations and accelerating their working. Now the computers are being used in the areas like acquisition, technical processing (classification and cataloguing), circulation control (issue and return) and serial control. At present there are number of library automation packages such as CDS/ISIS, LIBSYS, SANJAY, etc., available around the country.

In the process of inter-library loans (ILL) services, IT has influenced very much. By using the Internet services like E-mail, FTP, Chat, WWW, etc., the LICs can easely search the on-line public access catalogues (OPAC) of the other libraries for a particular document and sends request for ILL and get the document in a short time.

Reference service is influenced more by the IT than any other services of the library and ICs. The new IT reduced the response time for reference query. The major reference sources are readily available in optical discs as well as in on-line database.

4.2 Information Storage and Retrieval

The days are gone when information used to be stored in clay tablets, wooden boards, papyrus, parchment etc., after invention of paper by Cai Lun in China in AD 105. The storage facilities have become more convenient. But in today's fast era paper is not a compatible storage medium. Due to the invasion of computer and information technological applications in the storage media now information is being successfully stored in the CD-ROMs, DVDs. Already large number of multimedia reference sources are available in CD-ROMs.

Usage of modern storage devices in the library and information centers has given scope to optimum reader satisfaction mainly because of its quick accessibility and accuracy in the information retrieval. That way libraries are going to 'paperless libraries'.

4.3 Internet Services and Information Networks

Internet is the gateway for libraries and Information centres to enter in to the electronic information era. Internet is providing the information generated by the different organisations, institutions, research centres and individuals, all over the world. Nearly ten per cent printed information is available on Internet and it is increasing day by day. So, many resources are available on the net which can be accessed in the library and information centres. Some of the resources available

on Internet include E-journals, pre-printed materials, bibliographical data, dictionaries, encyclopaedias, directories, reports, patents, standards and library catalogues etc.

All the Internet services can be effectively used by the library and information centres. Some of the main Internet services useful for the libraries are World Wide Web (WWW), FTP, Chat, on-line services, etc. that will makes the libraries successful in the information utilisation in a short time.

All the above information technological applications favours libraries to strengthen their services and resources. By using this advanced technology libraries can definitely be in a position to provided Quality Assured Services to the readers.

5. CONCLUSION

Libraries in developed countries have already initiated the process for implementing TQM. In India, recently central library of Indian Institute of Technology (IIT), Channai got the ISO 9001 certification. Each and every library and information center in India should take steps towards ISO 9001 certification and justify Dr S.R.Ranganathan's fourth law of library science, *i.e.*, save the time of the reader.

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11

Developing User Care Culture as a Strategy for Quality Assurance in Library and Information Services

P.G. TADASAD AND B.S. MAHESWARAPPA

ABSTRACT

This paper defines the concept of customer care, discusses characteristics and highlights its importance as a marketing concept in bringing quality in library and information services. While examining the strategy to be followed for identification of customers of libraries and their needs it also discusses the importance of developing a customer care culture among LIS professionals and its role in quality assurance in library and information services. The paper suggests the need for education and training of LIS professionals in customer care skills.

1. INTRODUCTION

The word quality is used universally for describing good product or service. It is more of a feeling of satisfaction it generates in the user of the product or service; as such it is very difficult to define the concept. As the main thrust of the term quality is on the satisfaction of the user of particular product or service, it can be defined as the totality of features and characteristics of a product or service that meets the needs (stated or implied). Quality means value and conformance to requirements. It is a measure of achievement in terms of expectations and satisfaction, in a most cost-effective way, in an organisational environment characterised by social factors, communication technology, market forces and other aspects of management.

The quality of an organisation is always focused on customer satisfaction. This is achieved only when all the factors governing customer satisfaction are given due attention. Hence the term

customer care as an approach has emerged as a new marketing concept that puts the customer, his expectations and demands first in planning and delivery of services. It has the basic objective of providing a definite quality assurance. As such customer care will go a long way through quality assurance.

The term customer care has been in use for the last two decades and it is slowly finding its way into services too and library and information services are no exception to this. There is much resistance in the library and information services field to use the word customer care as the main motto of libraries in providing free services. But this trend is slowly vanishing since many libraries, documentation and information centers have started marketing their products and services. An effort is made in this paper to describe how a customer care culture needs to be developed among the library staff. The word 'customer' in library and information service environment needs to be replaced and understood with the word 'user' or 'client'. Such connotation will help to link information with its service and will also take care if the library desired is provide free information service or priced service.

2. DEVELOPMENT OF CUSTOMER CARE CULTURE

The development of customer care culture begins with identification of customer, his expectations including means of determining and translating these expectations along with the factors affecting the services and the need for formal training to the service providers (library staff). It is a continuous cyclic process.

2.1 Identification of the Customer

Identification of the customer is a pre-requisite for customer care. Customer can be any person in terms of behaviors (aggressive, submissive and assertive), educational background (highly qualified, and illiterate), gender (male, female), age (children, young, middle aged, old) who visit or makes use of the services and products of the library and information centers in person (visible) or in absentia – by writing letters or sending e-mails or by making phone calls (invisible) with stated and implied needs. It is not an easy assignment. It requires a greater understanding of the customers and their needs, a closer liaison with them and a more proactive approach to identify the precise requirements of the customers.

Majority of customers will derive benefit from the services in which both systems and staff are involved in meeting their needs. They just not use the services; they use it with wide range of expectations and choices. Their expectations from the system include cost, currency, customisation, ease of access, exhaustiveness, acuracy, nascency, preciseness, presentability, reliability, speed, timeliness, up to date information, wide alternatives, and wide range of information services. Care, concern, courtesy, efficiency, flexibility, friendliness, helpfulness, hospitality, knowledge about customer information, patience, politeness, recognition of the customer, service philosophy, speed of service, sophisticated interpersonal and behavioral skills, and tactfulness in constructively reacting to the problems are the factors customers expect from the staff.

The information needs of the users depends on their work activity, discipline, area of interest, hierarchical position, professional orientation, motivational factors and individual characteristics. One should adopt rational methods in order to identify the exact information needs and expectations of the users. A careful blending of several methods depending on the user whose information needs and expectations are being studied is necessary.

The major steps in the process of identification of user's need[1] include study of subjects, organisation and its environment, user's specific environment, formal interview etc. The first step in conducting a detailed study of core and related subject/disciplines of interest to the organisation and users by following the methodology of studying a subject.[2] Then a detailed profile of the organisation and its environment comprising its overall objectives and functions has to be made. The next step is to study each of the individual users, where emphasis has to be given to the basic needs.

The direct methods of user study involves survey using questionnaire, observing the user at his work place; dialogue with user while providing information service; observing the user while using information services and sources; observing the user with his colleagues and personal informal contacts. The indirect methods include the analysis of reference queries, documents consulted and used, analysis of user's feedback to information services, etc. The next step is to have a formal interview to know his expectations and needs so that these can be translated into providing quality services.

2.2 Translate Expectations into Operations

Once the users' expectations from the system, library staff and information needs are gathered, processed and analysed, these need are to be translated into operations. The entire process is so complex, that it is affected by various internal and external factors. The internal factors include technical, structural, managerial, psycho-social goals and values. The external factors include availability of financial resources, geographical environment, technology, demographic patterns, availability of materials and library resources, political climate, cultural and social conditions, future trends, law and government.

On the basis of the results of the study of information needs and expectations from the system and library staff the following strategy can be used to assure quality in services.

2.3 Mapping of Information Needs

On the basis of the results of identification and the study of information needs of users in core, peripheral and related disciplines, a detailed mapping of information needs has to be done, to identify the existing and desired levels of information resources development.[3]

2.4 Well-Defined Quality Policy

The extent of assurance of quality depends on the standards of quality-policy adopted by the library and information centers. The well-defined quality policy should guide the library and information centers in providing quality services. Hence, a quality policy based on the realities needs to be formulated, for library in its own setting and environment. Such a quality policy document should provide a detailed profile of the organisation and its environment, objectives and functions, kind of programmes, kinds of users, their expectations and needs, priorities and limitations and information services to be provided etc.

2.5 Quality Circle

There should be a quality circle consisting of LIS staff, authorities of the organisation and representative users to monitor at regular intervals how effectively the quality policy is being implemented and in the process making relevant and time-bound changes.

2.6 Run Focus Groups

Focus groups also have to be established for each of the specific activities and information services provided by the library and information centers. Each focus group so established should be made responsible for assuring quality in each of the specific activities and information services. These should continuously monitor and evaluate the specific activities and information services, and should give regular inputs to the quality circle.

2.7 Quality based Information Services

It is not enough if the library and information centers have: mapped information needs; have well-defined quality policy; has established quality circle and run focus group. What is important is, these need to be translated into quality information services, by making use of various IT based information retrieval tools if required.

2.8 Staff User Meet

Staff-user meets have to be regularly organised within each focus group, in the presence of quality circle. This meet should elicit many facts and realities on part of the staff and expectations, dreams and information needs on part of the users. This kind of interaction will certainly help the user in knowing the capabilities and limitations of the system from which they are getting information services and also assist the library staff in assuring quality inspite of the limitations.

2.9 Service Brochure, Information Kits and Helpdesk

As a first step towards providing quality assured information services, the library and information centers need to publish service brochures and information kits. These should provide detailed information regarding the information services provided, the time required to provide such services, the formats in which the output of the services/ products are given, the cost involvement, extent of coverage and scope of the services including limitations. This will help users in knowing the range of services being provided in a nutshell and also aid in creating awareness about these services. There should be a help desk to help/assist the users.

2.10 Transparency in Administration

The administration in library and information centers has to be made transparent. So that each user can know the formal administrative process. The authors have experienced that the lack of transparency in administration hinders the utilisation of the services and products. To minimise this a work a manual can be published, so that the users can be acquainted with the procedures of the system.

2.11 Proper information Control

Due to scattering and seepage of information, a proper information control is a prerequisite to provide any information service. Otherwise this will be a great hindrance in providing quality information services. The fast tracking ability of information or knowing where to find what enables quality services.

2.12 User Feedback System

User feedback will certainly go a long way in improving the quality that is assured. Implementing user care policies include guaranteed and publicised levels of service in the form of the user charter.[4] A suggestion box can be kept, to elicit comments about the system and the staff. User feedback may also take the form of either user-staff dialogue or user user dialogue with the staff observing them. The dialogues should be analysed subsequently to provide more effective services.

2.13 Well-defined Roles and Responsibilities

Each staff in the library and information center, irrespective of the cadre—professional, semi-professional and non-professional, need to be assigned well-defined roles and responsibilities and should be made accountable for their roles and responsibilities. This will assure quality, as the concerned staff will discharge the duty effectively due to accountability.

2.14 Participatory Decision Making

Participatory decision-making is found effective and binding in marketing ventures and has to be imbibed among the LIS staff. The decision has to be made collectively by the concerned focus group. This will eliminate difference of opinion regarding mode of delivery of the service and brings uniformity.

2.15 Service Philosophy

The service philosophy is more of ethical nature. The staff must realise that they are bound to discharge their duties, in accordance with the roles and responsibility for which they are paid. They have to work with professional zeal and ethics with the understanding that by serving the user one is not doing any favour to him/her, on the other hand it is a service opportunity for which the staff exists.

2.16 Improved Interpersonal and Behavioural Skills

As involvement with users is required of LIS staff; the skills required are interpersonal and behavioural and at a problem solving level. The staff is required to be positive in their attitudes and behaviour and requires improvement in interpersonal relations and commitment at all levels. The staff counseling can be organised to improve the behavioural and interpersonal relations. LIS staff should adapt flexible, efficient interpersonal and behavioural skills, which put the user first-with an attitude of user care.

3. DEVELOPMENT OF USER CARE CULTURE AMONG LIBRARY STAFF

Though user of the library is considered as a key element in the system and there are theories and models of designing the services tailored to users requirements, he/she was never considered a customer in the marketing sense. As such LIS staff have not been exposed to customer care skills in the marketing sense. Their training should primarily focus on satisfying users needs relevant to their skills and motivations. Special attention need to be paid to the training in assertiveness, dealing with difficulties and stress management. The training programme should be conducted at two different levels: one for the in-service professionals and the other for the learning professionals *i.e.* students of LIS. The in-service professionals should be encouraged to take part in continuous in-house training programmes or avail commercial customer care training programmes (right now there is none). For the learning professionals customer care culture has to be introduced in the curricula of Master's degree program in Library and Information Science. The range of issues to be included in the training are attitudinal and motivational training, crisis management skills, flexible approach, empowerment of staff, creation of

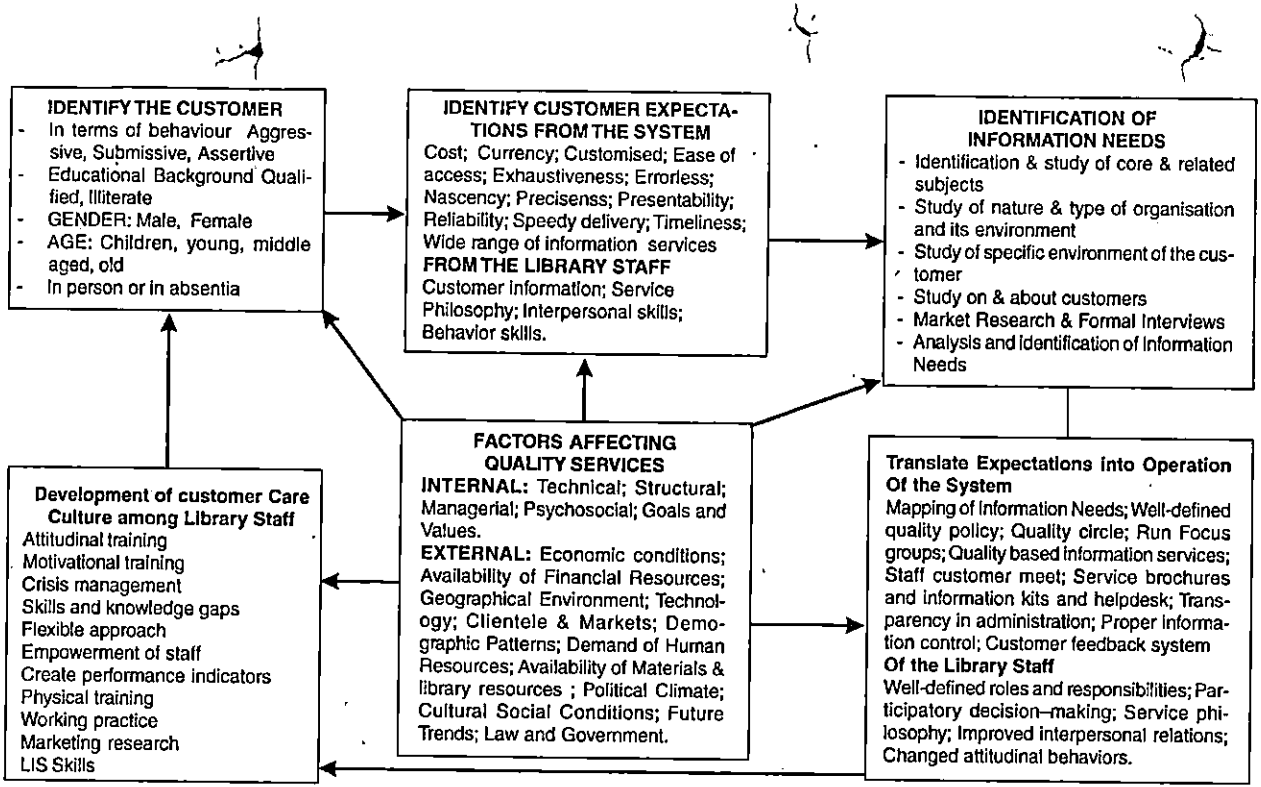


Fig.: Development of Customer Care Culture in Libraries

performance indicators, physical training, working practice, marketing research along with LIS skills.

4. BENEFITS OF USER CARE CULTURE

Customer care culture offers many benefits. At the outset it recognises the user as the key element in designing the services and products of library and information centers. User will get a positive psychological feeling that his expectations have been translated into the service or products that he makes use of to the optimum extent thus, satisfying his criteria of quality. As far as LIS staff are concerned the results of customer care will yield less complaints, more working practice and above all a sense of professional satisfaction. This will certainly result in maintaining and improving the quality of the services and products and also help later in turning to TQM and getting ISO certificate.

5. CONCLUSION

The development of a customer care culture, to be translated into user care culture in libraries requires commitment from the library staff at all leveles. It should form the hub of library activities and must pervade all aspects of its processes and procedures. Library staff must be involved at all levels and at all stages of a customer care program. The working environment should be improved with a particular emphasis on training and customer care initiatives. The benefits of customer care development programme can be considerable but the success depends on the willingness of individuals to take responsibility for their own development and on the commitment of management.

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14

Downward Strategies of University Librarians

AJIT SINGH SIWATCH

ABSTRACT

This paper studies 15 downward strategies to find out how they are used by university librarians in Haryana to lead their subordinates in accomplishing the aims and objectives of their respective libraries.

1. INTRODUCTION

The essence of leadership is influence over followers. Leaders use power to influence the followers, this influence is exercised through the use of various behaviour strategies or methods. Both superiors and subordinates exercise their power but by different methods, in different situations, and for different reasons.

The objective of the present study is to find out the downward strategies used by the university librarians to lead their subordinates in accomplishing the aims and objectives of their respective libraries. The study examines the availability of the following 15 downwards strategies' *i.e.* Assertion, Coalition, Diplomacy, Manipulation, Ingratiation, Exchange of Benefits, Personalised Help, Persuasion, Rationality, Sanctions (positive), Sanctions (negative), Showing Dependence, Showing Expertise, Threats and Upward Appeal.

2. LIMITATIONS OF THE STUDY

This research endeavor has been completed by an individual scholar and therefore, certain constraints like time, financial resources, and

sufficient authority to collect the required information, are always there. To highlight a few, it may be mentioned that the inferences drawn are based primarily on the perceptions of the respondents and the observations made by the scholar. And thus, like other social sciences, the limitations of perceptions of the subjects and also the prejudices of the scholar in making observation always influence the rationality interpretations. Though, through observations the scholar tried to compare the two situations *i.e.* the information recorded by the observational units in the schedule and the actual behaviour practiced by the leaders of the selected libraries to lead the participants. For the purpose of generalisation of inferences in the survey sample libraries from different states of the country should have been included, but due to time, financial and personal limitations, only four university Libraries operative in the state of Haryana have been selected. Pertaining to actual practices of downward strategies practiced by the heads of the libraries, the author has tried to unearth the reality either by putting counter questions or by observing the behaviour of the heads. Despite these limitations, the author with his sincere efforts has tried to find out the significant conclusions on the subject of the study.

3. UNIVERSE OF THE STUDY

For the purpose, the main survey was conducted in the period of 1996 to 1998. The study is confined to the university libraries located in the state of Haryana. The university libraries in India are many and they differ form one another in many respects. The selected area is wide and it is very difficult to cover it by the investigator. During the period of investigation, there were four university libraries, in the state of Haryana, which are rich in their collection and known for providing effective services.

4. THE SAMPLE

The sample for the present study has been drawn from all the four university libraries of Haryana: *i.e.* Nehru Library, Ch. Charan Singh Haryana Agriculture University, Hisar (UL1); National Library In Dairy, National Dairy Research Institute (Deemed University, ICAR), Karnal (UL2); Jawaharlal Nehru Library, Kurukshetra University,

Table 1: Data Summary Regarding the University Libraries under Study

Library code	UL-1	UL-2	UL-3	UL-4
Name of the University library and address (date of establishment)	Nehru Library, CCSHAU, Hissar (1970)	National Library In Dairy, National Dairy Research Institute, Deemed University (ICAR), Karnal (1955).	Jawaharlal Nehru University Library Kurukshetra University Kurukshetra (1956)	University Library Maharshi Dayanand University, Rohtak Haryana (1976)
Type of University	Agricultural University	Deemed University (University level institution in Dairy).	State University	State University
Type of Library	Agriculture Uni. Library	National Library in Dairy	University Library	University Library
Size of the Staff total (Total)	90	21	91	86
Professional	10	5	16	28
Semi-Professional	28	5	20	10
Other Staff	52	11	55	48

Kurukshetra (UL3); and University Library, Maharashi Dayanand University, Rohtak (UL4).

5. PROFESSIONAL QUALIFICATION AND EXPERIENCE OF THE LIBRARIANS

The table shows that out of four, three library leaders were professionally qualified and only one is a non-professional librarian. The two leaders were working as librarians and other two were operating as incharge librarians. Experience-wise the two librarians have got the experience of about seven years where as the incharges are credited with experience of two and half year (refer to table 2.)

Table 2: Experience of the Librarians

University Libraries	*Professional*	*Non-Professional*	*Librarian Incharge*	*Library*	*Service as Leader of the Library*
UL.1	Yes	–	Yes	–	7
UL.2	–	Yes	–	Yes	2½
UL.3	Yes	–	–	Yes	2½
UL-4	Yes	–	Yes	–	22

6. THE SURVEY SCHEDULE

To obtain the perceptions of respondents on various issues pertaining to the objectives of the study one schedule (Annexure-I) consisting of two sections was prepared and administered to the subjects. Sections A included 6 items concerning the personal information data of the respondents. Sixty items have been included in section B to examine the ways of dealing by the librarians with their subordinates in day-to-day affairs (for instance downward strategies of the Librarians)

6.1 Personal Data

The Section A of the schedule deals with the name of the library, the designation of the respondent, his qualification and experience. It has six items and all the items are measured on the basis of SIM scale (*i.e.* single item measures) and each item having different scale points.

6.2 Downward Strategies

Sixty single statement items which seek to measure the 15 dimension of downward strategies were drawn from the current literature and work of Ansari (1960), Falbo (1977); Falbo and Peplau (1980), Kipnis et al (1980) with some changes to tap the librarians' downward strategies like assertion, coalition, diplomacy, manipulation, ingratiation, exchange of benefits, personalised help, persuasion, rationality, sanctions (positive), sanctions (negative), showing dependency, showing expertise, threats and upward appeal. To gather the perceptions of the respondents, they were asked to rate the items on a 5-point scale: 1=Strongly Disagree (SD); 2=Disagree (D); 3=Indifferent (I); 4 = Agree (A); and 5=Strongly Agree (SA) and simultaneously they were asked to respond to the items of what they generally did or did not (please refer to Table 3).

Table 3: Downward Strategies and Distribution of Items

S. No.	*Strategies*	*Code*	*Sr. No. of Items*	*Total Items*
1	Assertation	A	8,18,21,31,50,59	6
2	Coalition	C	3,29,37,46	4
3	Diplomacy	D	16,33,58	3
4	Manipulation	M	32,52,60	3
5	Ingratiation	I	4,7,24,51,56	5
6	Exchange of Benefit	E	13,17,40,499,54	5
7	Personalised Help	P	6,34,53,57	4
8	Persuasion	P1	4,41	2
9	Rationality	R	1,15,30,42,55	5
10	Sanctions (Positive)	S	9,12,27,44	4
11	Sanction (Negative)	SI	2,5,14,36,48	5
12	Showing Dependency	DI	28,42,47	3
13	Showing expertise	EI	25,35,39,45	4
15	Upward Appeal	U	11,20,22,26	4

A total of 60 items pertaining to the strategies, which have been adopted by the university librarians for their subordinates to get the responsibilities accomplished, were isolated on the basis of recent

work of Ansari (1990). However, certain modifications have been made for making the Ansari's study relevant to the present study. For this purpose all the librarians included in the samples were asked to check their positions on a 5 point scale in relation to each statement relating to all the 15 identified downward strategies named above.

The librarians were asked to check their position on a 5 point scale in the frequency with which during the recent times they engaged in the behaviors described by the scale items to influence their immediate subordinate in their day to day working. They were instructed to respond in terms of what they generally did not do, and not respond in terms of what they would like to do. Fifteen types of strategies were taken under study and sixty single-statement items belonging to strategies were put to measure their existence in the librarians. Table 4 shows all the downward strategies of the librarians along with the items distributed among them in the questionnaire put before them (Annexure-1).

7. ANALYSES AND DISCUSSION

Most of the items related to the selected variables, incorporated in the schedule, supplied to collect the primary data were designed to be responded in terms of five point scale (Likert type scale) and respondents were asked to identify their position on the scale by encircling any one point *i.e.* either by circling SA or SD on somewhere in between these two extremes. For the purpose of scoring, each category of responses, have been assigned weight as 5 to SA, 4 to A, 3 to I, 2 to D and 1 to SD.

The frequencies for each response have been totalled in relation to every dependent variable and for all categories of our observational units included in the sample. And, finally these frequencies have been multiplied by their respective assigned weights to compute obtained score. The percentage for score has been ascertained as under:

Percentage for score = Obtained Score divided by Maximum Score multiplied by 100. (i.e. O.S. *M.S./100)

Where, Maximum score = Total number of respondents multiplied by Maximum assigned weight (*i.e.* 5).

7.1 Results and Discussions of the Study

The sets of the items of downwards strategies were calculated on the

basis of appropriate scores obtained by the librarians. After calculation, the scores of the sets were converted into the score with a maximum of the base score 100.

The ranks assigned to each adopted downward strategies to deal with his subordinates (Table 4) in terms of accomplishment of responsibilities offered to them, depicted that the librarian of UL-1 has practiced ingratiation as a major strategy which has been followed by personalised help, rationality, diplomacy, positive sanction, showing expertise, assertion, persuasion, and coalition as the obtained score for these strategies have been 70 and above. Further, the exhibit also indicates that the librarian has not given much importance to the strategies like exchange of benefit, upward appeal, showing dependency, manipulation and threats.

The Librarian of UL2 explained that he was was adopting positive sanction, assertation, rationality, diplomacy, showing expertise and ingratiation as major strategies to deal with their subordinates which have been at the scores of 80.0, 76.7, 72.0, 66.7, 65.5 and 64.0 respectively. While he is not definite about is the strategies of personalised help which he scored at 60.0. The table also shows that the librarian of UL2 has not adopted threats, negative sanctions, exchange of benefits, persuasion, showing dependency, coalition, manipulation and upward appeal strategties in his dealing with his subordinates, which he scored them below 60. On the basis of rank the table describes that the university librarians mainly used positive sanctions, assertion, rationality etc. as strategies.

On the basis of the description given in the Table 4, positive sanctions, ingratiation, assertion, coalition, diplomacy, personalised help, persuasion, showing expertise, upward appeal, exchange of benefit and manipulation were the strategies of librarian UL3's behaviour with his subordinates as his scores have been more than 60. About the strategies like dependency and threats he has shown uncertainty as he scored them at 60.0. But he was sure not to award negative sanctions to his subordinates in his service period. On the basis of above analyses, we can infer that he always believes in strategies like positive sanction, ingratiation and assertion etc.

The librarian of UL4 described that the diplomacy, persuasion, pesonalised help, showing expertise, exchange of benefits, coalition, rationality, positive sanctions, showing dependency, exchange of benefits, ingratiation, upward appeal, manipulation and assertion strate-

Table 4: Downward Strategies
(Maximum score = 100, N = 4)

Strategies	UL1		UL2		UL3		UL4		Combined Score	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
A	80	7.5	76.7	2	80	6	66.7	12.5	75.9	7
C	70	9	45.0	10	80	6	80	7	68.8	9
D	86.7	4	66.7	4	80	6	93.3	1	81.7	2
M	46.8	14	46.8	9	66.7	12	66.7	12.5	56.8	13
I	96	1	64.0	6	84	2	72	10	79	4
E	60	10.5	40.0	12	72	11	80	7	63	11
P	90	2	60.0	7	80	6	85	3.5	78.8	55
PI	80	7.5	40.0	12	80	6	90	2	72.5	8
R	88	3	72.0	3	80	6	80	7	80	3
S	85	5.5	80.0	1	85	1	80	7	82.5	1
SI	52	13	32.0	14	44	15	64	14	48	14
DI	53.3	12	40.0	12	60	13.5	80	7	58.3	12
EI	85	5.5	65.0	5	80	6	85	3.5	78.8	5.5
T	20	15	26.7	15	60	13.5	40	15	36.7	15
U	60	10.5	55.0	8	75	10	70	11	65	10

gies are the part of his behaviour in dealing with his subordinates as he scored them more than 60.0 per cent. Threat is the only strategy, which the leader never used against his subordinates. On the basis of rank it can be described that the behavioral strategies mainly adopted by the UL4 librarian are diplomacy, persuasion, personalised help showing expertise, as these strategies have been ranked at first, second and third respectively.

Combined results of the table 4 depicted that the downward strategies adopted by the university librarians of Haryana against their subordinates were: sanctions (positive), diplomacy, rationality, ingratiating, personalised help, showing expertise, assertion, persuasion, coalition, upward appeal and exchange of benefit as he scored these strategies more than 60.0 scores. The table also clearly depicted that they never used threats, negative sanctions, manipulation and showing dependency type of strategies against their subordinates in their dealing as they scored them 36.7, 48, 56.8 and 58.3 per cent respectively. On the basis of ranks as depicted in the combined results of the table 4 that the librarians used mainly positive sanctions, diplomacy and rationality as these ranked at first, second and third with the scores of 82.5, 81.7 and 80.0 respectively.

8. CONCLUSION

The survey has presented the data as to how the librarians of the university libraries exercise their power and what are their strategies in dealing with their subordinates in their day-to-day working and in exercising their leadership. The survey was conducted in four different type of university libraries located in the state of Haryana. One university belongs to agricultural education, another belongs to dairy education and remaining belong to basic education. Having such a heterogeneous universe was a deliberate attempt to generalise the findings in significantly different setting. Primary information was collected through conducting interviews of the respondents and these interviews were conducted in confidence to maintain secrecy for the information given. They were also assured of complete anonymity of their individual responses. Before the measures were subjected to final analysis, their psychometric properties were thoroughly checked. In brief, each of the measures had substantial reliability and construct validity.

Main objective of the study is to examine the popularity of the influence strategies adopted by the university librarians in dealing with their subordinates. The summary analysis of influence strategies (downward strategies in dealing with the their respective subordinates) as reported by the respondents for their popularity is contained in the Table 5.

Table 5: Popularity Order of Influence Strategies

Popularity	*Downward Strategies of the Librarians*
Most Popular	Adopted.
	1. Sanctions (positive)
	2. Diplomacy
	3. Rationality
	4. Ingratiation
	5. Personalized help
To	6. Showing expertise
	7. Assertion
	8. Persuasion
	9. Coalition
	10. Upward appeal
	11. Exchange of benefit
	Not Adopted
Least Popular	1. Showed dependency
	2. Manipulation
	3. Sanctions (negative)
	4. Threats

The Table 5 clearly points out that positive sanctions, diplomacy, rationality, Ingratiation and personalised help are the most popular tactics used by the university librarians for influencing their immediate subordinates. Some tactics like—showing expertise, assertion, persuasion, coalition, upward appeal and exchange of benefits, which appear to be the least popular in the behaviour of the librarians for

influencing the immediate subordinates. In contrast such tactics as showing dependency, manipulation, negative sanctions and threats are the influence methods, not used by the university librarians.

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ANNEXURE-I

SCHEDULE

All the statements are described on 5 point Scales, except Section A. Respondents were asked to respond to the statements according to your level of agreement: SA—Strongly Agree; A—Agree; I—Indifferent or Uncertain; D—Disagree; SD—Strongly disagree. Before recording the response, be sure how strongly you agree or disagree with the statement and then circle the appropriate response category.

Anonymity of respondents is ensured. Kindly cooperate.

Researcher

SECTION A (PERSONAL DATA)

1. Name of the Library_____

2. Your Designation_____

3. Your experience in the profession with the present library_____

4. Your experience in the profession with the other library _____

   i. Library _____ Years _____

   ii. _____

5. Total experience in the present position _____

6. Educational Qualification _____

SECTION B (DOWNWARD STRATEGIES)

1. I convinced them by telling them the urgency and utility of the issue at hand. SA A I D SD
2. I gave them as unsatisfactory performance evaluation. SA A I D SD
3. I brought some friends along to back my request SA A I D SD
4. I asked them to do some task in a polite way. SA A I D SD
5. I shouted at them in front of their coworkers. SA A I D SD
6. I did personal favours for them. SA A I D SD
7. I made them feel important. SA A I D SD
8. I set a time deadline for them to do what I asked SA A I D SD
9. I gave them a satisfactory performance evaluation SA A I D SD
10. I repeatedly forced them to comply with my arguments, as they were the need of the time. SA A I D SD
11. I usually referred the matter to a higher authority if the situation so demanded. SA A I D SD
12. I praised them verbally for their outstanding performance. SA A I D SD
13. I promised to help them in getting further advancement if they helped me now. SA A I D SD
14. I withheld their future advancements. SA A I D SD
15. I told them the reasons why my plan was the best. SA A I D SD
16. I showed that I was concerned about their welfare. SA A I D SD
17. I offered an exchange of favour SA A I D SD
18. I repeatedly checked to see if my directions were followed SA A I D SD
19. I threatened to fire them if my request was not followed SA A I D SD
20. I obtained the informal support of higher ups. SA A I D SD
21. I demanded that they do what I requested SA A I D SD
22. I obtained my boss's approval before making the request SA A I D SD
23. I threatened to give them an unsatisfactory performance evaluation SA A I D SD
24. I praised them with superlatives SA A I D SD
25. At times I showed my knowledge of the specific issue SA A I D SD

26. I got the support of someone higher up to back my request SA A I D SD
27. I recommended them extra benefits (e.g. Overtime) for getting my work done. SA A I D SD
28. I created the impression that I cannot really work without their help SA A I D SD
29. I got everyone else to agreed with me before I made the request SA A I D SD
30. Sometimes I told them the reasons for making a request to them SA A I D SD
31. I repeatedly remind them about what I wanted SA A I D SD
32. I gave them distorted information about the reasons to comply with me SA A I D SD
33. I showed that I sought their help SA A I D SD
34. I helped them even in personal matters. SA A I D SD
35. I told them that I had a lot of experience with such matters. SA A I D SD
36. I showed a feeling of dislike towards them SA A I D SD
37. I called a staff meeting to back my request SA A I D SD
38. I threatened them over all further advancement SA A I D SD
39. I influenced them because of my competence SA A I D SD
40. I reminded them of some past favour that I did for them. SA A I D SD
41. I got my way by convincing them that my ways was the best way SA A I D SD
42. I argued my points logically SA A I D SD
43. I preferred that they had the responsibility to decide things for me SA A I D SD
44. I recommended a salary increase SA A I D SD
45. My knowledge of the technical issue won their favour for me SA A I D SD
46. I obtained the support of my colleagues to back my requst SA A I D SD
47. I made them realize that I needed their help SA A I D SD
48. I challenged their ability (e.g., I bet your can't do that). SA A I D SD
49. I asked them to cooperate to get the work done while promising extra benefits for it SA A I D SD
50. I simply ordered them to do what was asked SA A I D SD

51. I used words which made them feel good SA A I D SD
52. I kept a record of their mistakes SA A I D SD
53. I went out of my way to help them in the time of their need SA A I D SD
54. I offered some personal sacrifice in exchange (e.g. Doing a part of his or another job). SA A I D SD
55. I told them exactly why I needed their help SA A I D SD
56. Even when I knew I would not use their advice. I consulted them SA A I D SD
57. I encouraged them to discuss even their personal problems SA A I D SD
58. I showed that always supported them SA A I D SD
59. I pointed out that the rules required that they comply SA A I D SD
60. I usually got my way by making them feel that it was their idea SA A I D SD

10

Quality Information Management for End-User Satisfaction: Techniques and Strategies

JAGTAR SINGH AND TRISHANJIT KAUR

ABSTRACT

In order to encash the networked environment, library and information professionals are required to develop and adopt certain techniques and strategies from time to time. Continuous curriculum development, upward management, insourcing, selective elimination of information, end-user training, professional development, and information literacy are a few techniques and strategies suggested in this paper for quality information management (QIM) for end-user satisfaction.

1. REAL-TIME ACCESS

It would be appropriate to begin this article with Negroponte's views. He writes, "when I hear the mantra 'anything, anywhere, anytime', I try not to choke. My goal is to have 'nothing, nowhere, never', unless it is timely, important, relevant or engaging."[1] The above lines have a clear cut message for the library and information professionals. For Negroponte, unlike Marshal McLuhan, it is the message and not the medium which is important. Neither medium is the message nor message is the medium. Infact, end-user satisfaction is the mission of library and information professionals. Library and information professionals' focus should be on information needs of the end-users. Therefore, an analysis of community information needs should be the main concern for library and information professionals.

2. NATURE OF INFORMATION

In fact, the end-users want integrated information, irrespective of format, location, or the medium. Information must be accessible to one and all. Only that way the democratisation of knowledge and information can take place. In the agrarian society labour was essential input, in the industrial society money played a pivotal role, and in the global information society, information has become a strategic resource. Increasing information deluge, growing and diversifying universe of users, rising prices of publications, ever changing formats of documents, increasing end-user expectations, and declining library budgets are forcing the library and information professionals to develop their competencies to manage this strategic resource called information. There is a strong need for value addition to our services at every step. Before discussing the benefits of quality information management, it would be appropriate to explain the concept and nature of information. Though difficult to define, yet information may be defined as a process or an intangible entity. In Orna's words, it is, "anything people want to know and apply in their work to achieve their, or the enterprise's objective."[2] According to Newman and Newman, "information is that which destroys uncertainty."[3] If knowledge is power, then information is instant power as it is capable of substituting men, money, materials, and methods. Infact, it is not the definition that matters but rather the use to which information is put. Quality assurance has become a more challenging task in the case of Internet-based digital documents. With the emergence of the Internet and multimedia virtual library, there is no competition for space as was in the case of print-based peer reviewed scholarly journals where many research papers were rejected only because of the constraints of space. Now-a-days, a lot of junk is being made available via the Internet. In this context, there is an immediate need to separate the 'cyber-gem' from the 'cyber-junk'. Previously LI professionals were supposed to handle the print-based publications only. Now they are required to negotiate digital documents also to manage the paradox of paucity of quality information in the Internet-based information deluge. It reminds us of Coleridge's couplet, "water water everywhere, but not a drop to drink."

In the words of Megill:

- Information is a resource. Like other resources it has value and can be managed.

- Information gains value with use.
- Since information gains value with use, it should be available to the broadest possible audience.
- Information should be organised to meet the needs of the user.
- Work will be fundamentally transformed if information is managed as a resource; information is organised for dissemination; work is organised around information flow.[4]

Today, libraries and information centres are not the only sources of information. Private enterprises are also entering this field with profit motive. Moreover, with the convergence of computing and communication technologies, it is now possible to have real-time access to the Internet-based digital documents via a networked workstations. Hypermedia and multimedia have made the process of scholarly communication more efficient and effective. As such, there is a strong need for resource sharing via networking.

There are many benefits of quality information management. These include enhanced professional image, end-user delight, improved products and services, and a team approach to problem solving. Therefore, it must be our effort to cherish and use what we have. We must become proactive rather than being reactive. For this purpose, first of all the mission of the organisation should be defined and then suitable strategies should be worked out to obtain the mission. We must follow the just-in-time paradigm of providing access to quality information keeping in view the declining library budgets.

3. PARADIGM SHIFT

Libraries and information centres' real job is to acquire, process, store and disseminate quality information. This job can be performed successfully only if the library and information professionals learn to adapt to the changing environment. If we look around us, we find that there is a paradigm shift from stand alone libraries to library and information networks, from print-based publications to formless data, from intermediary to end-user model. As such, our libraries should not work as just-in-case store houses of books, rather these should be just-in-time gateways to pertinent information, whereas library and information professionals should play the role of gatekeepers and facilitators. One stop shopping centres or information gateways like

Bubl ,<http://bubl.ac.uk>, available via the Internet, can provide the end-users with a seamless connection to the Internet-based resources and services. Managing information with the help of Bubl type gateways can prove to be a good strategy to overcome the problem of the widening gap between the growing universe of digital documents on the one hand and declining library budgets on the other. In fact, these gateways can provide useful links and routes to quality information sources to the end-users having networked workstations.

4. ACCESS PROBLEMS

In the developed countries, the gateways have improved access to information significantly, but things are far from satisfactory in the less developed countries. These gateways have brought many challenges and opportunities for the end-users across the globe. The Internet-based resources and services, such as e-mail, file transfer protocol (FTP), telnet, websites, browsers, search engines, mailing lists, electronic journals, electronic newsletters, computer conferences, discussion lists, bulletin boards, newsgroups, OPACS, and databases have the potential to make the world a global electronic village on the one hand, and to widen the existing gap between the "info-rich" and "info-poor" on the other. The less developed countries have many economic, political, social, psychological, educational, cultural, technical and technological problems. Therefore the task of quality information management for the library and information professionals in these countries is not that easy.

5. QUALITY INFORMATION MANAGEMENT

It is high time to explain the concept and value of quality information management. Quality information management (QIM) assures that relevant, accurate, complete, usable, actionable and engaging information is procured, processed, preserved and made available to the end-users in a timely and cost effective manner. Unwanted information is disposed of and useless information is not kept at all. Thus the information manager has an important role to play. In the process of quality information management, he is not only a catalyst, but a collaborator also. Capturing and storing of knowledge and information cannot justify the cost unless someone puts this knowledge and

information to use for the benefit of the organizations and society at large. Ranganathan's five Laws of Library Science also emphasize the provision of equitable access to relevant information in a timely manner. Infact, providing access to information and communication technologies (ICTs), and large amounts of information is not a solution to our problems. Our job is to fine tune the formléss data to the needs of the end-users. We are required to filter this data into information and process it further into knowledge.

6. KNOWLEDGE MANAGEMENT

According to Megill, IRM emphasises client/user/patron, looks for an empowering and decentralising management structure, sees the integration of all information as a primary task, and requires commitment to automation and electronic data transfer for providing better information products and services for those clients.[5] The concept and practice of information management leads us to a new concept of knowledge management. In the words of Remeikis "simply put, knowledge management is the creation, capture, exchange, use and communication of companies 'intellectual capital' – an organizations' best thinking about its products services, processes, market and competitors."[6]

Paul has further made the things crystal clear. In his words "it (knowledge management) is the activity that marshals knowledge resources, whether in the form of print, electronic information or the human capital of highly educated and experienced personnel, for the most complete and effective intellectual arming of the organization or individual to meet all the challenges the world offers."[7] In short, knowledge management means integration of the internal and external data/ information. Knowledge management, in its pure form, is a natural extension of information management.

7. TQM, BENCHMARKING AND LEARNING ORGANIZATION

TQM takes into account the assumption that quality assurance is a holistic approach to management which brings into consideration everything about a library right from its management to its services. Infact, library and information centres must become learning organisations to meet the challenges of the changing environment.

"Applied properly, TQM is not simply a means of quantifying quality, it is a means of expanding organizational thinking and learning capabilities."[8]

For Barrier, four essentials of TQM are:[9]

- an intense focus on customer service,
- accurate measurement
- continuous improvement
- new work relationship based on trust and teamwork.

To these, St. Clair has added the following two:[10]

- a desire for quality, on the part of all information stakeholders, and
- the commitment and enthusiasm of the senior management to improve products, processes, services and company cultures.

Benchmarking can also play a significant role in quality information management. It can improve the efficiency and effectiveness of information management system considerably. Benchmarking is a Total Quality Management (TQM) tool used to measure and compare the work processes in one library with those in other libraries. According to Gohlke[11] the goal of benchmarking is to increase your library's performance by:

- identifying libraries with best practices as partners,
- measuring and comparing a selected work process against partner libraries,
- conducting an interview with the "best practiced" library, the one with the most efficient and effective work process and
- adopting, or adapting, their best practices in your library.

TQM and benchmarking concepts can be applied effectively only by a learning organisation. Continuous value-addition to its resources and services should be its main concern.

8. STRATEGIES FOR QIM

The countries which have access to the Interenet-based resources and services are facing many problems. These problems relate to bibliographic, physical, lingual and conceptual access. Organisation of digital documents, developing online search skills, selective elimination of information, continuing professional education, and end-user

training can play a significant role in this regard. The mind-set of the masters and the end-users need to be changed. There is an immediate need to spread information literacy and network culture. For this purpose, the developing countries must adopt national information policies and develop library and information infrastructure. Continuous curriculum development, upward management, insourcing and professional development are other useful strategies for managing quality information.

9. CONTINUOUS CURRICULUM DEVELOPMENT

Library and Information (LI) curriculm should stress understanding, principles and skills rather than facts, buzzwords and routines. Current trends in the theory and practice of the profession must be included in the curriculum on a continuous basis. In the first place, the LI programmes in India must be redesigned to prepare the professionals to assume a proactive role in coping with ICTs and vast amounts of information available in different formats. These professionals must become change agents in future. They must be trained in the use of multimedia and latest information processing and searching techniques. Information needs analysis, evaluation of information sources, problem solving, goal setting, planning, communicating and managing information are the other competencies that need be developed among them. The proliferation of LI schools in India must be stopped immediately. The existing schools must be strengthened and there should be provision for accreditation of Library and Information Science programmes being run by regular departments and distance education institutions.

10. UPWARD MANAGEMENT

End-users' access to quality information cannot be ensured without the help of top management. According to St. Clair, "Quality proceeds from the top, and all the goodwill in the world, enthusiasm, excellence of service, and commitment to that excellence from library and information services workers will not be totally successful until senior management has accepted (if not initiated, which is far preferable) the concept of quality and encouraged the Argentine-as a whole-to adopt them."[12] Therefore, it is definitely important to

pinpoint what management really wants from the library, but getting that information may not be so easy. Gohlke has very rightly said that, "keep your ears and eyes open and always stay tuned to the organizational network to determine the goals and objectives, concerns, values, plans, and problems of upper management. This requires that you get out of the library."[13] Only this way the professionals can get feedback to improve their processes, products and services. Their success lies in value-addition to the resources and services being managed by them. "Management wants to know about value-added information, particularly, what information the library produces that customers cannot obtain elsewhere."[14]

11. INSOURCING

There is again a relative shift from outsourcing to insourcing, where a unit's manager decides to hire an information specialist with a commitment to quality information as well as accountability and responsibility for the same. This person ensures the management and delivery of information for that unit. This process is known as insourcing. Information is a critical factor in unit's success. Information management as a critical role is a normal function (not a fringe function), as it enhances the critical link between the value of information provided by an information specialist and the use of that information by the end-users.

12. PROFESSIONAL DEVELOPMENT

Professional development of the information providers is also very important because today is the era of subject experts and end-users. It is best that we develop the abilities of library personnel so that they are able to manage and enhance the use of information strategically. Similarly it will be essential to get continuous feedback from the end-users. This can be done by conducting use and user studies from time to time. Dr S.R. Ranganathan has always emphasised the need for focusing our attention and energies on the needs and expectations of the end-users. It would also be helpful to discuss what the current customers expect from the library and librarians and if the librarians feel they can meet those expectations. There is also a need for dynamic leadership. The staff will require tactful and diplomatic leaders

with superb inter personal skills. The latest technologies, inspite of their deskilling, dejobbing, and dehumanising impact, will have to be used strategically to obtain the context specific mission. This can be done only by developing certain competencies among the library personnel.

13. CORE COMPETENCIES

The Special Libraries Association (SLA) has identified a set of core personal and professional competencies which can be categorised broadly under five general headings: Vision, Service, Networks, Professional growth, and Political acumen.[16] The LI professionals must have a sound knowledge base, suitable skills, and a positive attitude.

In this context, the parent bodies must ensure that:

- The information management specialist has an expert knowledge of information resources,
- has specialised knowledge of the content of these resources,
- understands and implements information delivery media
- performs as a manager within the organizational entity, and,
- serves as an information advocate within the organization or community at large.[17]

14. CONCLUSION

While concluding this paper, it would be appropriate to underline, "the need for transition from a print environment to an electronic environment that is expert assisted and user oriented."[18] Hybrid library is an effective mechanism for managing information successfully, which practically means processing and marketing of quality information in the given context. We will have to develop a function, just not a place. This function is managing access to quality information with the help of ICTs. Our information activities will have to shift from support function to management function. Our main job will be to use expertise and knowledge in obtaining the mission of ensuring massive access to quality information for all. In this context we must not forget the ALA motto: Global Reach, Local Touch. It means, we must change our attitude and learn to develop, promote, and improve the indigenous databases and diaspora.

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15

Quality Management of Library Service in Academic Institutions

BAMAN PARIDA

ABSTRACT

The paper introduces the concept of 'service level agreement' and describes how it can be used as a tool for creating and monitoring the quality of library services. It recommends that the provision of service level agreements is most appropriate to academic libraries for quality management.

1. INTRODUCTION

Quality may be defined as fitness for purpose. Quality is conformance to requirements of customer, it is not what the planning and producing people may think or wish to be. It is exactly what goes in the mind of the customer when he receives and personally apprises the product or service. This includes recipient of internal support service or work in progress, the internal customer as well as external customer. So the significance of quality is directly related to customer satisfaction.

According to Jack Hagan[2] 'the Customer first' conceptual definition of quality suggests that a company bases all its quality standards, or performance standards on the customer's requirements. In order to understand the meaning of quality standard it is necessary to consider these two aspects of its definition:

(*i*) Quality standards and organisation standards of operation are one and the same thing. Quality standards are not additional

requirements to be met or not met as conditions warrant. Because these are the absolute requirements for the performance or results that the company expects from its employees which are usually found in documents like job descriptions, work process definitions, function responsibilities and product or service specifications.

(*ii*) Determining exact customer requirements for establishing quality standards is not a recorded process. In the eyes of the customer both internal and external perceptions are everything. It is delicate and significant judgmental in the standard-setting process. Because the way a product or support service is perceived by its recipient may be different from how it is perceived by its supplier.

In reviewing the quality of a library service the librarian must have a clear understanding and definition of the purpose of the service, *i.e.* mission statement, aims and objectives. The librarian must use measures to check how fit for purpose the service is, how well service is meeting these aims and objectives. He must have a mechanism for updating and amending the purpose of service as institutional goals change. The librarian must translate the aims and objectives of service requirements into specific goals, targets and activities. Also the librarian must use performance measures to check how effectively the specific goals are being met and activities being performed.

2. DEPLOYMENT OF AVAILABLE RESOURCES

Quality management of library service must be based on deploying all available resources to the best effect for providing the services which are in the interest of the parent institution and library users. In academic libraries, users community is almost exclusively member of the institution and the interests of library users and the parent institution are common. The fundamental aims of both should be the best possible quality in research and teaching and learning. Now it is seen that there is a tension between the day to day needs of the library users demanding more library materials, more services, longer opening hours and more access to external information sources and strategic needs of the parent institution requiring changes in the balance of service provision and the development of new services to meet changing

circumstances. Therefore, the librarian needs to engage in a dialogue with both the institution and the users of the service when developing and defining the library services.

3. SERVICE LEVEL AGREEMENTS

A service level agreement may be used as a tool to create and monitor the quality of library services. Jean Steward (1998)[2] has observed that the use of service level agreements supported by performance measures is one option open to libraries, and it can assist the development and implementation of an information strategy. It can serve as a framework for a rigorous analysis of service provision and a means of communicating and agreeing on that provision. It can play an important role in managing the information requirements in a time of diminishing resources and in developing mutual understanding on the nature and extent of services which can be provided. The librarian needs to think strategically about the effective use of limited resources to ensure that these are utilised in the most cost effective and efficient way to support the organisational objectives. So, the library must be clear about the services it will provide with the funding at its disposal and the users to whom these services will be made available. Thus a service level agreement is a contract by means of which two parties communicate to each other about their commitments in relation to the resourcing and provision of services to a given level over a given period.

4. NEED FOR SERVICE LEVEL AGREEMENTS

Libraries and librarians have always had a strong service ethos, but this has not always been focused on user needs or expections. Users are becoming more demanding and their expectations are increasing. They expect that all information is immediately accessible to them; that they can have whatever information they want whenever they want it, wherever they want it. Also they expect effective help in using these resources but they do not want to learn how to use these resources. Thus, the users expect to make a single contact, which should result in instant, on-site response from an information professional catering to their information needs.

In the United Kingdom the charter movement, emanting from the

Citizen's Charter published in 1991 has reinforced the above stated expectation of perfection and the users are increasingly demanding for information services and resources. Although the number of such service level agreements is growing, there is no uniform style which can be adopted for such an agreement. However some service level agreements adopted by universities in United Kingdom define service standards and requirements for both the library and users and describe the mechanisms which will be used to monitor performance. The key elements of a service level agreement are two-fold: (*i*) Service level and (*ii*) agreement. Service level will describe the nature and level of library services which will be provided as a core service from centrally provided funds. It will codify the detail of the services to be provided explicitly. It will provide realistic and measurable targets which users may expect the library service to meet. It will describe the performance measures and indicators which will be used to judge the service. Moreover, it may also describe additional premium services which may be provided for a change to be met either from end users or from departmental budgets. On the other-hand an agreement will define (*a*) the group or groups of users to whom these services will be delivered, (*b*) from a contract between two sectors within the organisation (the library and a faculty) or between the library and the organisation as a whole, (*c*) the obligation on the users or the other party to the contract, and the obligations on the library, (*d*) the remedies offered to the users if service standards are not met. Thus, service level agreements are used as internal documents within an organisation. In such cases where funding is provided by the traditional method of block grant from the centre to the library to provide services for the university community it is often necessary to create one agreement with the whole organisation. Here the first stage for the library staff is to consider and codify the service elements which it offers and to agree internally on what basis these should be made. Of course, this in itself may be a difficult process. So the library staff must have a clear understanding of the services.

5. SERVICE DESCRIPTION

A service description may raise a variety of questions as follows:

(*i*) Are all services available at all times while the library is open, or are there different levels of service in office hours and for evening and weekends?

(*ii*) What level of reference service is available after 5 p.m.?

(*iii*) Can undergraduates expect to find a copy of every item on every reading list in library stock?

(*iv*) How many copies of core text should be provided for a course with specific number of students, if they are all expected to read it within one week?

(*v*) How quickly should a new purchases be processed

(*vi*) Is it resonable to hold items in processing for one week so that a new books display service can be offered each Monday?

(*vii*) How much time should be spent helping a reader print from a CR-ROM?

(*viii*) Should additional induction sessions be run in the evenings when part-time student attend seminar?

(*ix*) Should library staff insist that all faculty notify the library about requests for course materials to be placed in short loan collection before start of the teaching period?

(*x*) What sanctions should be imposed if they do no?

The creation of such type of service level statement will provide opportunity for the library professionals to test the assumptions which have monitored the services provided in a rigorous manner and will generate debate, clarify objectives and often lead to changes in attitude and in practice. However testing assumptions and clarifying objectives must be user-based if a service level statement is to become a contractual agreement with the university and with users. Also consultation will be very vital throughout the process. Further feed back and information may be obtained through analysis of complaints, suggestions, questionnaires, users groups, attendance at meetings of student associations, liaison and other contact between individual members of the library staff and users.

6. SERVICE LEVEL AGREEMENTS IN INDIAN UNIVERSITIES

Service level agreement is the process of establishing a dialogue with users which can result in a mutually acceptable statement of obligations on the library service and the library users. Usually the university librarian prepares the service level statement and gets the approval by Library Committee or Faculty Boards or Senate or Academic

Council. There may often be tension between the users, who are interested in service quality and quantity and the organisation which may be more concerned with cost effective use of limited resources. In Indian universities a service level agreement must be realistic and affordable to be achievable.

7. ROLE OF UGC

Since the establishment of University Grants Commission of India in 1953, various efforts have been made to improve the standard of higher education and the UGC has been functioning as an autonomous advisory organisation for the promotion and coordination of university education and for the determination and maintenance of standards of teaching, examination and research in universities. The UGC formulates and directs the policies and programmes of higher education in India. The UGC has the responsibility for providing maintenance grant to nine central universities 12 deemed to be universities and 70 colleges of Delhi University and for colleges of Benares Hindu University. It provides plan grant to all the above universities and colleges and gives financial support to eligible state universities. The UGC has played an important role in the improvement of university and college libraries. Realising the value and importance of a well-organised and well-equipped library and its role in higher education, the UGC accepted most of the recommendations of the several committees and commissions. It has played an important developmental role by providing financial assistance for collection development, acquisition of books and periodicals, purchase of furniture and equipment, construction of new library buildings, also various schemes like wheat loan, Educational Exchange programmes, Book Banks, Regional Library Centres, National Information Centres, Area Study Centres, Collection Development and Library Buildings etc., which have helped the university and college libraries to make rapid progress.

The Government of India has accepted recommendation of different committees and commissions and issued orders for the implementation of revised pay scales of library professionals. The recommendations regarding scales of pay, career development, promotion terms and conditions of revised scales, recruitment and qualifications requirements, continuing education and appraisal of performance, service conditions, including period of probating, non-vacation, age

of superannuation, code of professional ethics, grievances redresal, pay fixation formula were to be modified suitably for librarians. The main objectives of committees and commissions were to share existing resources to optimum utilisation and avoid duplication of holdings so as to have an access to wide range of literature.

The working group on Information and Library Network, modernisation of library services and informations centres and the developmental programmes of NISSAT, NIC, DESINET, EARNET, CALNET, DELNET and CSIRNET has covered in detail various aspects such as Output and Services, INFLIBNET organisation, standardisation for information handling, application of software requirements, computer hardware, technical specifications, network man power and training need, management mechanism and cost implication. UGC has established Information and Library Network (INFLIBNET) at Ahmedabad and four Regional Information Centres at New Delhi, Bangalore, Calcutta and Pune. The main objective is to evolve a national network by linking various libraries and information centres in India to improve their capability in information handling and services, to provide on-line access to document collection by creating on-line union catalogue, providing prompt access to existing bibliographic sources, to develop a system of document delivery service, to introduce computerisation of operations and services in libraries following a uniform standard, to facilitate scientific communication through electronic mail, computer teleconferencing, to develop required manpower and evolve standards and guidelines of techniques, methods, procedures, hardware, software etc. for facilitating and use of information. UGC has granted financial assistance to different university libraries in India for automation and has launched several other programmes for the development of college and university libraries.

8. CONCLUSION

In India, library services are viewed traditionally and the usual categorisaiton is done as: circulation of documents, location of documents, use of catalogues, long range reference service, bibliographic service, current awareness service and SDI, reprographic service and orientation. But for the last two decades library service is turning to be more dynamic with the retrieval system itself in a state of continuous

and periodic revision. Now changing perspective about user needs are recognised such as: (*i*) enhanced role for online service (*ii*) library user education (*iii*) services for special groups (*iv*) subject orientation. Also, there is great need to develop relationship between the users, library and information professionals and the information resources. Thus library and information services to the academic community are to be viewed dynamically in terms of external environments, user community and the governing framework. However, there are institutional barriers to library service like (*a*) physical (*b*) organisational and (*c*) attitutional that need to be taken into account. Further care should be taken to cost and price each service at the bare minimum profitability and to suit the affordability of the customers/ users. Therefore, the provision of service level agreements will be more appropriate to academic libraries in India for quality management of library service in new millennium.

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16

Reengineering Library and Information Services: Experiences at IMT, Ghaziabad

RAMESH C. GAUR AND B.K. SHARMA

"At the heart of reengineering is the notion of discontinuous thinking-of recognizing and breaking away from the outdated rules and fundamental assumptions that underlie operations."

"Use computers to redesign-not just automate-existing business processes."

- Michael Hammer

ABSTRACT

This paper reports efforts made in the transition of a traditional library to a modern information centre, putting end users in contact with the information needed, wherever it is, either local or remote, on paper or digitally stored. The authors describe how this transition is achieved through a process of reengineering that involves staff, tasks, available space, available resources, and choice of tools. Experiences at IMT Library are shared.

1. INTRODUCTION

The present digital networked environment has changed the whole structure of "knowledge organisations" *i.e.* libraries. The pace of such changes is very fast as in last twenty years there are sea changes in the way the libraries live. The present day information seekers no longer entirely depend on library and information centres to fulfil their information needs as now they have alternative means of information. At the same time librarians have also found the new ways of storage,

organisation, analysis and retrieval of information resources. Therefore, if the information seeking pattern and behavior of the information seekers have changed at the same time the librarians are also acquiring competence to cope.

We are at a crossroad; there are critical questions to be examined, choices to be made, challenges to be met, and opportunities to be fully availed. We have a unique opportunity to offer our expertise to the people struggling in Internet ocean to find out the relevant information with minimum efforts and time. Here, we have to do the "Samudra Manthan" ourself to provide pinpointed relevant information at the right time to the user. By this, we are going to fulfil the requirements of at least four laws of library science as enunciated by great Dr. S. R. Ranganathan. To fulfill these objectives, it requires a radical change in our thinking, in our organisation, in our people and in the usage of technologies. This radical change is possible by way of reengineering only.

2. WHAT IS REENGINEERING?

Reengineering or Business Process Reengineering (BPR) is one of the hottest buzzwords of the nineties. As its applications in different fields have increased, critics and critiques have started to emerge. So what is "BPR" or "reengineering"? It may be pertinent at this stage to define the term "Reengineering" as old as 1990 when it was first introduced by Michael Hammer in a Harvard Business Review article *Reengineering Work: Don't Automate Obliterate.* Michal Hammer and James Champy then further developed the concept of *reengineering* in the beginning of current decade in their trend-setting book *Reengineering Corporation* (1992). Importance of the publication may be gauged from the fact that within a short span of 5 years, over two million copies of this book were sold. The book was selected for the New York Times "Best-Seller" award. The definition of reengineering given by them in that book was:

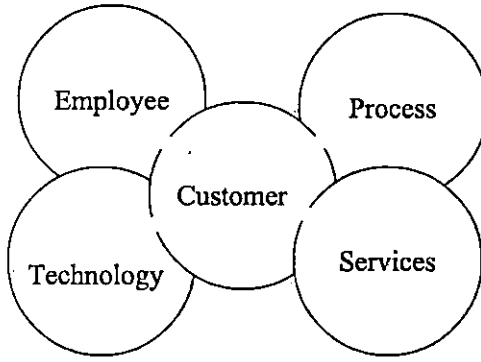
> "Reengineering is the fundamental rethinking and redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed."

Reengineering is a rapid and radical redesigning of processes,

services, policies and organisational structure of an organisation. Reengineering of an organisation has to start from scratch and it must be in a radical way. In general term, we can define reengineering as an art of changing an organisation's way of thinking and, consequently, of doing things in a radical way. It involves changing processes, organisational structures, management style and behavior, compensation and reward systems, as well as relationships with external and internal business partners. Sometimes the term "Reengineering" is considered as synonymous to Total Quality Management (TQM). It may however be pertinent to mention here that this term (Reengineering) has a much wider connotation because it takes into its fold not only TQM but other related aspects of management services such as automation, redesigning, reorganisation and downsizing. Therefore, all above mentioned systems and concepts are as a matter fact, part and parcel of Reengineering Management. It is more effective than TQM in the sense that the TQM is a measure to improve the existing system, whereas "Reengineering Management" is applied from the scratch *i.e.* from the beginning. It often uses technology in creative and innovative ways. It is a time bound process and necessitates to work within the prescribed time frame. Ultimate aim of reengineering management is to provide customer satisfaction by way of efficient and effective services and in addition laying down a set of effective and efficient processes for the organisation.

Reengineering produces radical results. In other words, it is a story of 'radical change'. The process involved in reengineering is as follows; to start with you take a clean sheet of paper and forget about the existing processes; you must start from the scratch; write down organisational goals and future strategies to achieve these set goals; have a strong vision of radical changes; select your team and empower them; select appropriate management tools and technologies; and chart a pragmatic implementation plan to specify tasks, resources, and timing of events.

In a reengineering process, first, resources have to be generated. Secondly, operations have to be stabilised and thirdly, when the operations become familiar, the focus shifts to the clientele. A fine-tuning in the systems can be done through feedback from the users.



Reengineering Cycle

3. WHY REENGINEERING?

A library is considered as an "organisation" within an organisation. All management principles applicable to an organisation can be successfully applied to a library. A library has to function as an academic library on one hand and as a special library on other hand. Together with this, there are several other factors such as information revolution, changes in information environment, Internet and Intranet, Web Publishing, Electronic Publishing, floods of publications, increase in cost of publications, budget constraints and competition that force us to devise ways and means for bringing radical change in housekeeping and the services. Are we really prepared for change? How to do this? Like that, there are many questions in the minds of the Indian Librarians. The paper tries to spell out answers for these questions with the application of reengineering management to library and information services field. Librarians are using technology to provide more rapid and productive search. The role of a librarian as information linker and sharer continues and evolves. Some of the issues faced by librarians in current information environment are as follows:

(*i*) The use of computer in libraries is a commonplace worldwide but in India it is yet to reach that level

(*ii*) In recent years there has been dissatisfaction among the users about the qualitative library and information services. Therefore, it is time to redesign the library and information services in such a manner as the users feel satisfied.

(*iii*) According to the changed information environment, it is

required to make changes in the organisational structure also. So, there is no escape from downsizing and rightsizing of an organisation through reengineering process.

(*iv*) Internet and Intranet revolution, Web publishing, electronic publishing and other Information technological innovations have forced librarians to play a new role to cope up with changes taking place. It is therefore necessary to achieve three Es *i.e.* Efficiency, Effectiveness and Economy in library and information services and also to gain three Rs Reputation, Recognition and Remuneration.

4. REENGINEERING Vs. OTHER PROGRAMS

	Reengineering	*Rightsizing*	*Restructuring*	*TQM*	*Automation*
Assumptions Questioned	Fundamental	Staffing	Reporting Relationship	Customer Wants and Needs	Technology Applications
Scope of change	Radical	Staffing, Job Responsibilities	Organization	Bottom-up	Systems
Orientation	Processes	Functional	Functional	Processes	Procedures
Improvement Goals	Dramatic	Incremental	Incremental	Incremental	Incremental

Source: *The Reengineering Handbook* by Raymond L. Manganelli & Mark M. Klein, p. 19.

REENGINEERING Vs. TQM

Reengineering	*TQM*
i. Responsible for radical improvements by breaking down barriers, innovative use of technology, new ways of working, changing rela-	i. It is more concerned with continuous improvements within an agreed framework and limited to the immediate context.

Reengineering	*TQM*
tionships and redrawing traditional boundaries.	
ii. Focused towards end customer	ii. May be focused towards a particular activity or immediate context also.
iii. Responsible for complete organizational change	iii. TQM can complement BPR
iv. It is a complete system	iv. It is an instrument

5. STEPS INVOLVED IN REENGINEERING

5.1 The Vision

Before making a change, one should know about its requirement. Therefore, it is the first step in the reengineering process that the organisation must identify its core requirement. The organisation must establish a vision that must be based on its core requirments. The vision developed at this stage will act as a guiding principle in the entire reengineering process. The vision must include the organisation's future strategies in meeting out its business needs.

5.2 The Mission

The mission statement must clearly describe the following things about the organisation:

(*i*) The ultimate goal of an organisation;
(*ii*) The basic functions carried out with the help of its core competencies in meeting out the ultimate goal; and
(*iii*) Its customers.

5.2 Identification

Apart from identify the problem areas, it is necessary to identify following areas as well:

(*i*) Identify core requirments;
(*ii*) Identify the existing problem areas;
(*iii*) Benchmark best practices;
(*iv*) Identify the people's requirements ;

(*v*) Identify the training needs for the workforce; and
(*vi*) Identify the technological requirements.

5.4 The Preparation

5.4.1 Approval from the Management for the Reengineering

It is essential in reengineering process that senior management must recognise the need for change. Reengineering is a costly affair and at the same time, its results may be drastic. Therefore, management must be informed about the various phases of reengineering and its impact on the organisational philosophy, structure, culture, and resources.

5.4.2 Formation of Reengineering Team

For the success of reengineering process a competent team consisting of people working within the organisation is to be formed. If it is required, a consultant from outside may be included in the team.

5.4.3 Reengineering Human Resources

Prepare work force for the reengineering process. In this process following steps are to be followed

(*a*) Inform the staff about the reengineering process, its need and impact and also about their roles and responsibilities
(*b*) Must win their confidence
(*c*) Provide/arrange training for them in the different areas such as technology, management principles and practices etc.
(*d*) Make new recruitment wherever necessary

5.4.4 Planning for Change

In this step one need to do preparation about the following things

(*a*) Preparing for change
(*b*) Designing the change
(*c*) Evaluating the change.

5.5 Methodology

Before putting "Reengineering" into practice one need to design a "Reengineering Plan". This plan includes the step by step information regarding approaches, methodologies, tools, and techniques to be

adopted in the process of reengineering of the organisation. Methodologies can be grouped, classified, numbered and arranged according to spectrum of changes required in the different aspects of an organisation. Among different methodologies a sense of balance has to be maintained. Some of the steps to be followed in designing methodology for business process reengineering is as given below:

- Identification of the process/activity to be reengineered
- Selection of Reengineering Team
- Understand the current Process
- Develop a vision for new improved process
- Identify and list out the actions needed to implement or redesign new process
- Execution of the list out actions
- Review of the results
- Feedback
- Fine tuning
- Awards/incentives

5.6 Reengineering Tools

There are no readymade reengineering tools available in the market. For every reengineering process, you need a different set of reengineering tools. Selecting reengineering tools is different from the procurement of any hardware or software. The tools may be available within the organisation and may be procured from the outside. The reengineering tools may be grouped as follows:

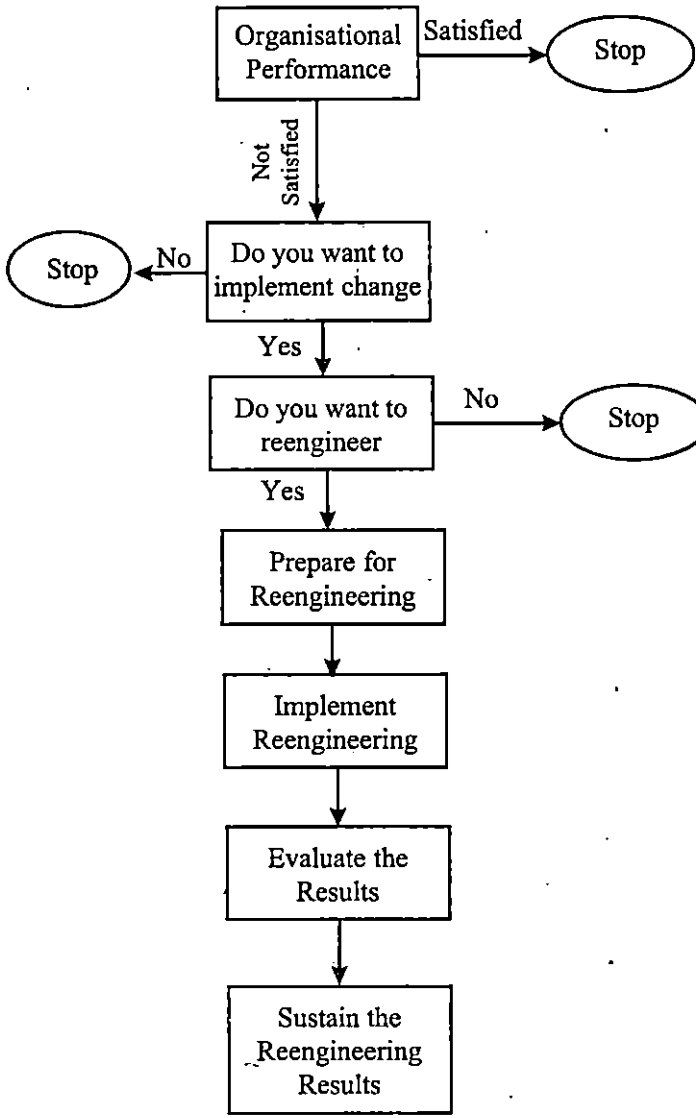
- People related tools
- Process related tools
- Technology related tools
- Services related tools

The right reengineering tools may be anything from pencil, paper, software, hardware, training and recruitment etc. One should keep following things in mind before the selection of reengineering tools:

- It should be user friendly
- Must enhance vision clarity
- Must help in improving productivity
- Must set higher quality levels

- Must be suitable to the needs and the requirements of the organisation
- It should be cost effective

REENGINEERING FLOW DIAGRAM



6. REENGINEERING RISKS

Reengineering can be risky in case entire process is not completed or left mid way. It is not advisable to implement this application without proper study. Before implementing it, an organisation needs to clarify the steps involved in reengineering and must justify the need for reengineering. The reengineering is the process of radical change. It is a time bound process. Therefore, it is risky to delay the completion of the process. Reengineering is not advisable for every organisation. In a reengineering process the role of the leader of reengineering team is very important. Therefore, one should be very careful in choosing the leader of the reengineering team. Confidence and trust of management in the team leader and same confidence in the ability of his team is very crucial for the success of the reengineering process.

7. REENGINEERING EXPERIENCES AT IMT LIBRARY

7.1 Status of IMT Library Prior to Reengineering

IMT Library was traditional library with three large halls out of which one hall was used as Periodical section, other was for reading purpose and book were stacked in third hall. Half of the books were classified with DDC and other half were classified by Colon classification. The manual catalogue was not updated. Availability of the books on the shelves was based on own memory or in the circulation tray, these were the only retrieval tools available at that time. The unbound issues of journals were lying in the library.

The library activities were mainly to purchase books, accessioning and classification (but no cataloguing), shelving and lending of books and journals. There was no reminder system for any activity. No file systems, no library committee, no qualified library staff was available. The opening hours of the library were from 9.00 a.m. to 12.00 p.m. in the night. Library was running with the help of one professional and three general employees. Interestingly one peon used to sit on circulation and the other one was responsible for security whereas, the third was doing other works with the help of the librarian/assistant librarian.

In terms of use of technology or information technology even a basic instruments like Intercom was not available

It was necessary to undertake a demanding work on several fronts and the best tool was "Reengineering Management". Reengineering team was constituted to undertake following tasks:

(*i*) Reengineering yourself
(*ii*) Reclassification of entire library collection
(*iii*) Reorganisation of present library space
(*iv*) Renovation and extension of library building
(*v*) Reengineering of work procedures
(*vi*) Reengineering of library staff
(*vii*) Reengineering of library services
(*viii*) Reengineering of library collection
(*ix*) Library Automation
(*x*) Quality Assurance in library services
(*xi*) External resources to compensate inadequacies
(*xii*) Reengineering of library administration and management
(*xiii*) Marketing of library and information services
(*xiv*) Research and consultancy
(*xv*) Beyond reengineering.

7.2 Status of IMT Library in 2000

7.2.1 Some salient features about the present IMT Library

- Fully automated library
- First management library in India introducing bar code technology in its lending and time recording operations.
- Focus on electronic delivery of information
- In the process of development of digital library by adding some full text databases such as VANS Electronic Library and EBSCO Host
- Access to Internet and Delnet for the users
- Remains open throughout the year up to 2.00 a.m. in the night

7.2.2 Additional Responsibilities

- Undertaking all the jobs in relation to *Paradigm*: The Journal of IMT (production, designing, marketing, circulation and exchange etc.)

Committed to excellence, the IMT Library and Information Services delivers customer focused innovative information products, services

and programmes of the highest quality that are integrated with, and central to, the IMT's teaching, learning and research activities. The library facilitates excellence in teaching, creates an appropriate learning and research environment, anticipates and responds to student learning and research needs, contributes to positive graduate outcomes and provides the information infrastructure necessary for leading edge research activity.

In support of its educational mission, the IMT Library and Information Services provides a comfortable open stack environment for study and research. The 28,000 plus volume collection includes books, project reports, compact discs, software, audio and video cassettes, as well as subscriptions to over 300 electronic and print periodical titles. The library's local area network is bridged to the Institute's wide area network (WAN), to the student managers in their hostels and to faculty in their cabins.

Open for 18 hours a day, the library offers a variety of services including online and compact disc database searching. The student managers have access to a wide range of both printed and electronic information resources with an increasing stress being placed upon the electronic delivery of information.

The IMT library being a member of national (DELNET-Delhi Library Network) and international (INTERNET) information networks provides access to the online database services locally as well globally. It has also joined Management Libraries Network (MANLIBNET). There are numerous associations with other groups, such as American Center Library (ACL), British Council Library (BCL), Tata Energy Research Institute (TERI) and Bureau of Indian Standards (BIS) which operate in a collaborative, cooperating, or advisory manner to fulfill the information needs of our clientele. It is also having off-line electronic databases such as Capitaline Ole, Capita Stock, CMIE Databases. Vans.com and Vans electronic library etc. The International databases such, as EBSCOhost will soon make it a perfect electronic library.

The library's clients include student managers, academic and general staff, clients from groups with which the IMT has formal links, such as the industry, and faculty of the major teaching institutions as well as the wider community. It is reputed to be the best management library in the region.

It is the only library in India where all operations starting from entry point to exit from the library have been automated and will become a digital library before long. It is also helping other libraries to develop the expertise in the use of Information Technology in library and Information Services. Some of the initiatives in this direction are:

- Research and Consultancy Project undertaken for "The Total Library Automation" of Planning Commission, Government of India, Yojna Bhawan, New Delhi. The total project cost is Rs. 15 lakhs. Under the project the retro-conversion of about 1,40,000 books alongwith bar coding has been undertaken. The estimated time frame of the completion of the project is 12-15 months.
- Preparation of Project Report for the "*Reengineering of Library and Information Services*" of Lady Erwin College, University of Delhi with a estimated budget cost of about Rupees one crore. The report includes library building renovation plan, networking, bar coding and installation of other automated systems.
- Free advice has been provided to many management libraries including some of IIMs libraries about the use of Bar Code technology.
- Research and consultancy has been provided in following areas: (*i*) Library Automation; (*ii*) Library Re-designing; (*iii*) Bar Coding; (*iv*) Classification; (*v*) Reengineering of Library and Information Services.

8. CONCLUSIONS

Reengineering is a very powerful management application tool which can produce wonderful results. The sustainability of the reengineering processes is as important as reengineering itself. Therefore, one should make sure that redesigned processes must be used and sustained. Some of the aspects of reengineering such as downsizing and rightsizing must be taken in the true spirit of the process as downsizing is always not meant for cutting the number of people. This paper is meant to introduce some basics of reengineering. Generally speaking, it is nothing new for us. We have been using this application for one or other activity but without following the proper process.

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9

Strategies for Quality Assurance in Library and Information Services

ROSHAN LAL RAINA, ANJALI GULATI
AND ISHWAR BHAT

ABSTRACT

The paper justifies that achieving, maintaining, and sustaining quality in the library and information context (LIC) is not a one shot solution. Quality can be assured if the approaches followed, processes put in place and operations carried out are right the first time, every time and all the time in each and every domain of library and information functions and services. Some strategies identified for assuring quality in LIC have been discussed.

1. INTRODUCTION

The changing role of the information professionals from 'passive' providers of information to 'more pro-active' ones has thrown many challenges before them. They will succeed in facing these challenges if they accept them as opportunities. This would imply that not only will they have to be contented with providing books and papers to their users, when asked for, but they will have to acquire, process, read, understand, interpret and apply the information for the ultimate use and satisfaction of their patrons.[1] Hence, the collections they acquire, the processes they use to organise the collections and the ways they design to serve their users, must be user-oriented and not provider driven. Designing and implementing strategies with this end in mind will make 'quality' happen. With this understanding, it is fair to say that 'quality' is not a 'quick fix' and that it does not happen by

chance. Achieving 'quality' is a continuous process and needs commitment from everyone involved, right from top to bottom. This commitment can not be taken for granted unless he/she is made to understand and appreciate the value of his/her bit of contribution to the total cause.

Quality is nothing but delivering goods and services exceeding the expectations of the customer. These services need to be consistent every time. Therefore customer focus is the key issue in quality assurance. In a library situation, the user is the customer and, therefore, quality means providing library services which exceeds the user expectations, maintain consistency in service delivery.

2. LIBRARY AND INFORMATION CONTEXT (LIC)

If guided and inspired by what the Father of the Nation has said in the following lines:

- A customer is the most important visitor on our premises;
- He is not dependent on us; We are dependent on him;
- He is not interrupter to our work; He is the purpose of it;
- He is not an outsider to our business; He is part of it;
- We are not doing him a favour by serving him; He is doing us a favour by giving us an opportunity to do so.

Library and Information Managers (LIMs) will succeed in maintaining longevity of quality assurance in library and information services (LIS) if listening to 'users' becomes their business.

3. QUALITY ASSURANCE IN THE LIC

3.1 Collection Development

Collection development is an important task. It is a dynamic and continuous activity. In order to develop a need based, balanced, and active collection, a well-planned and thought out system should ensure collection development on following lines:

- Qualitative rather than quantitative acquisition;
- No 'March!' and March like pressures;
- No vendor patronage;

- Selections based on user requisitions/recommendations rather than on approvals/exhibitions;
- Strict adherence to delivery schedules;
- Promptness in settling payments;
- Neatness in budget keeping;
- Exploit Internet based resources to ensure speed in acquisitions; etc.

Designing and putting in place a well thought out instrument in the form of an 'acquisition policy' can help addressing the above concerns. However, such instruments will have to be developed only with the active involvement of users concerned. Further, such instruments can not be definitive of all times but will have to be subject to revisions and modifications at regular intervals of time, keeping in view various parameters that include:

- Change/modification in the organisational agenda;
- Change/modification in the user profile;
- Library's budget profile;
- Vendor performance profile; etc.

3.2 Organisation

The main activities involved in the 'processing' are: (*i*) Classification, (*ii*) Cataloguing and (*iii*) Subject/key-word indexing. All these are technical tasks and if performed with logic and user-approach in mind, will serve as helpful guides to the user in retrieving his/her documents/information expeditiously. In the present age when powerful computer devices and integrated library softwares are available, it does not make any good sense to assign a document a call number like XXX.XXXXXX.YYYY and so on.[2]

It is true for cataloguing and subject-indexing also. We may no longer be fussy about punctuation marks and other such little useful aspects prescribed by catalogue codes rather should instruct the machines to try all sorts of permutations and combinations in making intensive search for our patrons in desired fashion. Use of comprehensive databases like that of the LC/OCLC is advocated rather than redoing the same thing. OCLC has done a project on cataloguing Internet documents by using rule-set named 'Dublin Core (www.oclc.org). Since we are getting into the digital information world, usage of "Dublin Core' will be of great help in cataloguing the documents as well as in

economising upon time aspect. Because of its very simple features, it will also help users in quick retrieval of information.

3.3 Services

Creating awareness about the resources, facilities and services of a library and information centre, facilitates optimal utilisation of the same. Guidance in the usage of complex information resources in print as well as electronic media is what is becoming crucial for their advantageous exploitation. Accessing, retrieving, and delivering desired information, scanned through library and other alternate resources (like Internet) is posing a major challenge as well as opportunity for the LIMs. Developing competencies (especially in terms of IT skills) to take care of such requirements, is what can be a critical strategy for the LIMs.

4. CULTURE AND ENVIRONMENT

Quality assurance requires a culture that prompts customer delight through continuous improvement involving participatory and creative problem-solving approaches and a team ethos. These requirements can be met only if developing and sharing knowledge becomes a part of a organisational ethos.[3] Bringing in such a kind of culture, needs to be addressed from the leadership issue. In the LIC, leadership requires a transition from individual to holistic orientation, which, in turn will help in sustaining quality by integrating the activities of all its individuals and units.

Further, the whole style of management has to change from bureaucratic and hierarchical structure to a flat and team-oriented one wherein, the entire team will have to be made responsible. The team members will consequently need to be empowered to take decisions. The core issue for us is to recognise individual's skills in an organisation. There is an underlying assumption that more an organisation can share its knowledge in an adaptive and creative manner, the more likely it is able to sustain itself in the face of forces of change. Some of us, in the workforce, may have knowledge about the history of the growth of the system, others may know about IT implementation systems and so on, we need to leverage on the knowledge we already have. Concept of knowledge sharing could be endured in an organisation by rewarding people for sharing knowledge, which further improves organisation's culture.[4]

5. HUMAN RESOURCE ISSUES

Advantageous absorption of IT in libraries has a tangible impact on manpower. Since the work culture, methodologies, systems and procedures will undergo a change, the job content and profile of the individuals will also have to change accordingly. They will have to be regularly trained in using newer technologies be it in the area of working with computer (hardware/software), communication, networking, Internet, or other related technologies. Such regular exposures will enable them to discharge their services better.[5]

6. USER EDUCATION

Another major concern about reaching the goal of quality assurance is user education. In present scenario, users suffer from information overload and they have insufficient knowledge about what is available on Internet in their own discipline. On the other hand, their expectations have increased manifold mainly because of Internet and Web. Students, in particular intend to finish their academic/research projects, term papers etc. online, as they expect to find everything on the Internet. Increased user expectations have necessitated the need of refocusing on instruction by LIMs.

7. ORGANISATIONAL PREPAREDNESS

Given the parent organisation's mission, goals, objectives and functions, the library has to clearly define its mission, objective and functions *via-a-via* its relationship with the users. Understanding the organisational management, regular liaison and interactive skills act as catalysts to further developing this relationship. Based on this relationship, they should go in for suitable Information Technology Products (ITPs) and information technology based products as services (ITBPS). The services thus rendered have to be 'standard' (routine services to all the users) 'reactive' (general services on demand of users); and 'proactive' (services in anticipation of the user requirements). Such services will have to be externally efficient and internally effective. In this regard LIMs will have to go in for the state-of-art computer technologies, in both hardware and software, communication technologies and networking technologies that are aimed at

meeting the library's objectives in a more cost-effective manner. For this purpose, LIMs in most of the situations will have to closely interact with experts in the IT area and it is through such close interaction, meaningful and lasting solutions will emerge.

8. INTERACTIONS WITH IT EXPERTS

LIMs must seek advice of IT experts in issues related to the selection, procurement, installation of and training in computer hardware and software technology, communication technology/media as well as in the networking solutions. Their help will also be handy in terms of Internet connectivity/accessibility and design/development of Internet based library applications and so on.

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12

Strategies for Quality in Library and Information Service: The Need of the Hour

SONAL SINGH AND SURENDRA SINGH

ABSTRACT

The paper analyses the factors that demand greater professionalism, dedication and acumen from the library and its personnel. It indicates certain strategies and techniques that can help managers and practioners of this highly academic profession. The authors have tried to focus upon the areas which gain relevance in terms of qualitative improvement of services and products, and suggest measures to meet the challanges thrown before libraries and librarianship.

1. INTRODUCTION

Traditionally, libraries are the social institutions, shouldering the responsibility of intellectual development of the society. In the modern information society, libraries serve as information and communication centres. They identify the information needs of the society and provide reference, direct guidance and information to their clientele. Library is the biggest of all the agencies of education offering a 'principal road to achievements'. It takes firm roots in the social concepts and becomes an axiomatic truth. Today, libraries are supposed to provide a leading role in the field of information. The maximum use with minimum cost and time is the motto of library service. The qualitative development of a nation depends upon the quality library services. A qualitative library provides information, inspiration and recreation for the enlightenment of the faculties of the individual at

the vital spiritual and mental levels. The timely dissemination of information is very necessary in today's world for mechanisation and computerisation. The availability of information when it is needed, improves the ability of an individual, a business, a government agency and various other organisations to make information based decisions, to conduct research and to make a positive contribution towards socio-economic development of a country.

2. THE QUALITY CONCEPT

Quality is the basic philosophy and requirement of library profession and all libraries strive to deliver the highest quality of service. Quality is about expectations of functional performance. A quality service is one that fully meets expectations and requirements of the users. If a library provides right information to right user at right time and in required form, then it is maintaining quality. Qualitative library services mean satisfying the query of each and every user pinpointedly, exhaustively and expeditiously.

Librarianship in modern times is undergoing significant changes in outlook, functions, range and types of services and in methods and techniques. On one side the development of technology and its application to storage, processing and dissemination of information and on the other side the fast growth of subjects with complex interdisciplinary character and increasing demand for specific information have posed great challenges for qualitative library services. Today, it is very necessary for the librarians to have an eye not only on catering the requirements of the present generation providing them up-to-date library services, but also contemplate upon steps for shaping the libraries for the hi-tech generations of the future. The lifestyle has also undergone change today. The effect of mass media, information technology and information explosion have brought drastic changes in the behaviour of the users, who expect quick information. Library service is the core and the ultimate objective of any library work. Therefore, in order to provide efficient, pinpointed ad exhaustive information service to its users, the whole library system should be qualitatively managed. Today, it is very necessary to plan the strategies for qualitative library and information service, so that we can face the biggest challenge of ensuring equitable access of information to one and all.

3. STRATEGIES FOR QUALITY IN LIBRARY AND INFORMATION SERVICES

Strategies are the specific major courses of actions to achieve the set objectives of an institution. A library is a service oriented, non-profit organisation, with the objective of satisfying the intellectual needs of the society. The main functions of a library are acquisitions, technical processing, storage, retrieval and dissemination. The traditional way of doing these is marked with slow, labour intensive and repetitive mannual routines. With the advent of modern technology and its application, mannual routines have turned machine oriented one. The application of modern technology allows faster access to information. The evergrowing, continuous and multidimensional growth of information forces and implementation of latest information technology, in various library activities and meet the challenges of present information need based society. Following strategies will certainly help in establishing quality in library and information services.

(*i*) Specialised and short term courses shall have to be conducted to update the knowledge of professionals working in library and information centres and for the teachers of library and information science.

(*ii*) Workshops, seminars and refresher courses must be conducted to make the library professionals aware of the latest technological advancement.

(*iii*) The UGC should provide adequate grants for infrastructure development.

(*iv*) The library professionals should be made aware of different library softwares, databases, networking and resource sharing techniques.

(*v*) The library professionals can manage and operate modern information technologies much efficiently if the training courses are conducted from time to time at local, regional and national level.

(*vi*) The library and information science professionals should be ready to accept the changes.

(*vii*) While introducing the information technologies, the factors like cost, convenience, comprehensiveness and feasibility should be taken into account.

(*viii*) The library and information science education should regularly include modern technologies and new skills and the in service training courses for library professionals should cover the recent developments in the field.

4. CONCLUSION

The success of a library and information centre depends upon the satisfaction of its clientele. The libraries have to modify their services in accordance with the needs of the society. Unless the librarians adapt themselves to modern technological advancements, we can not expect quality in library services. Thus, adoption of newer technologies, and the knowledge of using those technologies with an attitude for service before self, is the need of the hour.

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Strategies for Quality in Library and Information Service in the Small Scale Industrial Sector

M. NAGARAJAN AND S. SURIANARAYANAN

ABSTRACT

The paper highlights the importance of information and communication technology as a strategy for improving the quality of library and information services in the small scale industrial sector.

1. INTRODUCTION

Libraries are considered as the most important sectors in the organisations. They are functioning as the supporting organs to their parent institutions in all aspects. The modern users are expecting a variety of services from the libraries for their business needs from selecting the business, to profiles of various small scale industrial projects, guidance for the preparation of project reports, details about various banking and loan facilities, subsidies for various services, raw material availability, new modern machines introduced in the field, human resource management and training, marketing, expansion of business, exports etc. and anticipate that these services should be provided with the current updated information compactly and within the shortest span of time. Quality in library and information service only will bring credit to the parent body for doing the business successfully.

But our existing traditional library system is not able to compete with the present globalisation of information networking and information marketing. It is essential that for meeting the demands and

needs of the potential users, the present traditional library system will have to be modernised with the latest information and communication technological tools and with new information policies. Then only the small scale industrial sector will be able to carry out its B2B and B2C transactions more effectively globally by competing in the international marketing arena with their quality products.

2. PRESENT STATUS OF LIBRARY AND INFORMATION CENTRES

Now-a-days the libraries in the small scale industrial sector are not in a position to provide all the relevant information required for the development and promotion of the business. Each and every small unit can't have the separate library facility as in the case of big industrial units. The small scale units will have to depend upon the libraries in the District industries centers (DIC) or the libraries in their associations. The national level documentation centre for small scale industries (SENDOC) is at Hyderabad. Most of the DICs have not established standard libraries in their centres and the associations are also now only planning to establish information centres. Due to various reasons they are unable to render their support fully to the development of the small scale industrial sector. Some of the reasons are given below:

- Libraries in developing countries tend to have very limited access to international journals, recent books, periodicals, audio-visual materials etc.
- The materials that do exist tend to be focused on issues and needs of industrially developed countries and lack relevance to the context of issues and needs of local users.
- Libraries are confronted with limited space to store information and lack of proper equipment and facilities to provide useful services to users.
- Libraries suffer from insufficient staff and the existing staff members have very low level of training.
- Libraries are viewed as the stand alone entities and are not well linked to other institutions.
- Libraries are lacking efficient and affordable data communication services required for providing speedy access to local, regional and international information resources.

3. INFORMATION TECHNOLOGY DEVELOPMENTS IN LIBRARY AND INFORMATION CENTRES

The latest developments in science and technology have made a tremendous impact on the library and information field in the small-scale industrial sector and present a variety of information technologies in various routines of the library. The following are the relevant information technologies used in various functions of the library for the effective use of library resources.

Computer Technology

Computers are used in managing the library routines in the following ways:

- Library management and administration.
- Database management and organisation.

Library and Information Technology

Information technologies are used in major technical sections to carry out the processes quickly and effectively. The details are given below:

- Classification
- Cataloguing/Indexing
- Current awareness service
- Selective dissemination of information
- Bibliographic database creation

Reprographic Technology

Information technologies are used in duplicating the documents on the value basis as well as with service motive to the users. They are as follows:

- Photocopying
- Xeroxing
- Microfilming
- Scanning
- Audio/Video recording

Communication Technology

Information technologies are used in the libraries as the communication technology tools for effective resource sharing and easy retrieval of needy resources. They are as follows:

- Networking of libraries
- Information networks

Publication Technology

Information technologies are used as the publication technology tools to produce modern digital documents. The details of various services are given below:

- Technical writing
- Editing
- Web Publishing

With the help of modern information and communication technologies (ICTs) the library and information centres (LICs) can be made fully automated and the library activities and services can be carried out qualitatively by using the information and communication technology tools as per the details given below:

(*i*) Collection, development and acquisition – CD ROM, Internet;
(*ii*) Cataloguing and Classification – Online Public Access Catalogue;
(*iii*) Circulation – Bar coding, data bases, Internet;
(*iv*) Reference Service – OPAC, CD ROM, Internet;
(*v*) Preservation and Conservation – Creating dust free environment by providing air conditioning;
(*vi*) Current awareness service – Through computers;
(*vii*) Selective dissemination of information – Through computers;

4. PRIORITY AREAS FOR FUTURE DEVELOPMENT

The library and information centres of small scale industrial sector will have to be modified from the traditional outlook to the latest ICTs outlook. For that we have to make tremendous changes in the library organisation and functioning.

- The libraries have to work for creation of global digital library and for that all the library and information centres will have to be computerised first and they should be interconnected next by way of networking.
- The resource gap can be narrowed and closed by making the text-books and periodicals electronically available.

- Proper mechanisms may be employed for exchanging information among the existing library and information centres in the SSI sector.
- Archiving functions may be developed and adopted to assist in replacing the paper documents.
- Telematics applications, which are capable of good performance over marginal communication channels may be implemented in enhancing services for the information retrieval, library loan requests and electronic document delivery.
- The LICs must also seek to develop more user friendly services and to extend their holdings and services in the area of audio visual and computer based courseware.
- The LIC staff will require additional training as well as capacity to adapt to the new institutional settings and employment opportunities.
- The LICs are placed to serve as the Public Gateway to information highways, as they provide both access and guidance and training to users.
- The LICs may be one of the most cost effective means for providing more people with access to a range of ICT based services.
- The LICs will need to play a critical role in mediating the ICTs and helping the users to overcome a learning threshold in accessing information.

5. PROBLEMS AND SOLUTIONS

The demand for the electronic inter-library loan services is expected to increase as the ISP for this application ISO 10161 is implemented on a wide scale. The demand for electronic information retrieval is also expanding rapidly (ITU, Unesco 1995).

These situations have forced the LICs to face the following challenges:

(*i*) More funds are needed to invest in equipment and networking.

(*ii*) The computer screens are less readable than hard copy and cause documented physiological difficulties, hence a continuous R&D will be needed to encourage the development of appropriate paperless applications.

While implementing the ICT tools in the services of LICs some

constraints will emerge in practical implementation. They are discussed below:

- Technological constraints: Age of informatics equipments

It can be rectified by replacing them with latest configurations. Additional accessories may be added to make them suitable for the current environment.

- Lack of infrastructure facilities

It can be rectified by making infrastructure suitable for the operations.

- Lack of reliable sources of power for various technologies

It can be faced with alternative energy sources like low cost solar power and battery recharging systems

- Exponential growth of Internet traffic

This situation arises due to slower speed of the equipment and lower access bandwidth. It can be rectified changing the latest configuration equipments and the bandwidth problem can be solved only by the revival of Government IT policies.

- Financial constraints:
  (*i*) Infrastructure
  (*ii*) Hardware
  (*iii*) Telecom Tariff
  (*iv*) Content

These problems can be solved by generating funds for suitable infrastructure and purchasing hardware. The Govt may give concession and relaxation in its tariff in certain cases and the cost of content preparation may be reduced by producing more and more software engineers.

- Content and interface limitations:
  (*i*) www has become a large depository for cyber junk
  (*ii*) Language is also a serious barrier to access
  (*iii*) Less educated users find it difficult to operate

These problems can be solved by introducing Internet II, inventing language fonts, translating software, and introducing simple interfaces and suitable voice based systems.

- Ethical and legal constraints
  (*i*) Freedom of expression,
  (*ii*) Intellectual property rights
- Political and institutional constraints
- Human resource constraints
- Socio cultural constraints

The Government may take necessary action and by implementing suitable amendments in the existing laws, these constraints can be overcome. The quality in library and information service in the small scale industrial sector can be achieved by taking effective and suitable decision in the following fields:

(*i*) Freedom of speech,
(*ii*) Intellectual property rights,
(*iii*) Privacy,
(*iv*) Allocation of communication capacity,
(*v*) Incentives and Subsidies,
(*vi*) Tariffs,
(*vii*) Tax exemptions,
(*viii*) Second hand market for ICT equipments,
(*ix*) Content Quality.

6. IT LIBRARIANS

In the changing environment the role of librarians will also be different from the one in the traditional libraries. The librarians hereafter will not be considered as the storekeepers alone. The electronic environment has given a lot of new dimensions to this profession. He will have to integrate the new information and communication technologies. Instead of producing data and information, he will have to assist the top-level executives in the organisation by taking away the task of information collection and dissemination. He will be the one in the managerial cadre and someone who can analyse the problem and provide the information solutions.

7. CONCLUSION

The quality of library and information service in the small scale industrial sector will be possible by implementing the information and

communication technologies and their applications in all the routines in the LICs. The problems and constraints can be overcome with the help of the efficient software professionals and the IT policies of the Government and render a better quality service to the users for promoting their business. It will also clear the way to the entrepreneurs to expand their product marketing at the global level. The information highway will open the new horizon for the small scale entrepreneurs in their business and give them the recognition at the international level in the global economy.

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TQM for the Competitive Capabilities of Human Resources in Information Sector

S. ALLY SORNAM

ABSTRACT

This paper analyses the inevitatble changes and the driving forces necessitating library professionals to effecting change. The paper discusses in detail the application of TQM in enhancing the capabilities of LIS professionals through personal performance assessment, personal skill development, developing team spirit and development of quality culture.

1. INFORMATION WORKERS

'The dogma of the past are inadequate to their stormy present. The occasion is piled high with difficulty and we must rise to the occasion. We must think anew and act anew' said Abraham Lincoln. This is true with library and information workers. There was a time when clever management of resources (people and finance) was correlated to successful management practices. The trend has changed today. Sheer knowledge and the way to acquire and use it alone is all that matters. Knowledge is a tool that must be constanly updated. Library and information professionals are the part of knowledge work force.

2. CHANGES – INEVITABLE

In the face of complex and dynamic environment the survival of any profession hinges on the adaption of new technology and human

competence. The ability to coordinate information technology and the innovative capability of human resources make a difference between the success and failure of an organisation. Library and information centres are no exception to this phenomenon. Information is strategic resource. Knowledge management includes knowledge capitals (*i.e.* information in the form of manuscripts, books, periodicals, research reports, seminars/conferences, softwares etc.) and knowledge workers. Since library and information professionals are knowledge workers, adopting new techniques would improve their skills and capabilities. It indirectly improves the services and products offered by knowledge workers. One such new technique which has been tested and proved to be fruitful in the management of human resources is TQM.

The following driving forces necessitate Library and information professionals for change in their work methodology:

(*i*) Development of effective information and communication system which increases human resource competencies.

(*ii*) A shift in attention towards research and development.

(*iii*) Consumer needs becoming the deciding authority of every decision-making.

(*iv*) Investment in technology transfer

(*v*) Reshaping human resources

Human resource is the most powerful tool in the hands of managers. TQM helps in reshaping the human resources.

3. TOTAL QUALITY MANAGEMENT

TQM is the planning, organising and controlling of organisational system to achieve continous improvement. TQM is a people focused management system aiming at quality in everything, everytime and at all the levels. TQM is defined as an effective system of integrating the quality development, quality maintenance and quality improvement effects of various groups in an organisation so as to enable production and service with the most economical level which also begets full customer satisfaction.

It is generally used for the following reasons:

(*i*) TQM helps to identify user requirements pinpointedly (the

users are internal—those who work for the organisation; and external—those who utilise the products and the services)

(*ii*) TQM helps to minimise the operation of various processes and activities by continous assessment.

(*iii*) TQM includes team involvement and a new style of authority.

4. TQM IN ENHANCING CAPABILITIES

Library and information professionals are a special task group force which has a target, specified services and products for a special group of customers. Applying TQM in the following areas would definitely yield better results.

(*a*) Personal performance assessment
(*b*) Personal skill development
(*c*) Developing team spirit
(*d*) Development of a quality work culture

4.1 Personal Performance Assessment

Performance is the contribution made by both individuals and system to meet the accomplishment of the objective of the organisation. In traditional approach individual performance was given importance. Total quality approach considers individual, team job and system performance. This involves task completion and relationship development. Work performance is related to the behaviour associated with the accomplishment of expected specified role requirement on the part of individual member. This is possible by reinforcing short-term quality oriented achievement of personal objectives to the betterment of organisational effectiveness.

Generally human resource performance addresses area like training, work redesign, employee ownership etc. Constructive partnership is essential. TQM approach builds partnership among its employees. Library and information system highlight and stress the human factors like personal knowledge, skills and abilities of individuals. This should be merged with organisational objectives. This is possible by employee involvement, delegation powers and utilising personal competencies of individual members for achieving higher and collective goals.

4.2 Personal Skill Development

Skill development means the expected progress of people from their initial introduction into any work situation to process development of directing style. Skills are developed by training and coaching. Whereas worker participation, attitudes and contribution decide the success of an organisation. TQM enables skill maturity (task competence, experience, willingness to accept responsibility, motivation to achieve). It also enhances high moral commitment to use power to enhance trust and care at workplace. TQM if applied in libraries and information centres would being a sea change in the potential skills of the professionals. Helping to develop skills of subordinates would give greater advantage to a library manager in the form of worker support.

4.3 Developing Team Spirit

A group is a collection of individuals who are in an interdependent relation with each other. A team is a small number of people with complementary skills who are equally committed to a common purpose. They hold themselves mutually accountable for working approach and goals. TQM makes teamwork as real power to the organisation. Real team is the basic operating unit of performance. Teams work leads to visionary leadership, group learning, employee empowerment and cooperation.

Working on a team instigates a strong sense of unity and commitment towards accomplishing a highly satisfying goal. Teams require individual and joint accountability for performance. Teams develop a commitment to a shared meaningful purpose that they own and translate that purpose into specific attainable goals. In many organisations human resource projects focus on individuals. Thus, the opportunities and rewards have also been designed around individuals which leads to competition, rivalries, favouritism, and self-centredness. TQM focuses on team building and mutual trust. The main barrier to growth among LIS professionals is the lack of team spirit. United we grow. TQM insists on team building which is one of the foundation stones of quality management.

4.4 Implementing Quality Work Culture

Work culture includes the prevailing work practices, work habits, work norms and work behaviour of individuals and the groups within

an organisation which becomes an accepted working system over a period.

TQM implies a work culture where members respect themselves and others. Emotionally well adjusted employees who expect to succeed regardless of the context are the result of implementing TQM. Employees are expected to foster collaboration and mutual support. Disrespectful treatment, prejudice and favouratism are treated morally offensive hence avoided. In TQM organisation people earn respect through performance. A workforce comprising of individuals who lead themsleves is an empowered work force.

5. CONCLUSION

Quality management is a never ending journey and the first step is commitment from the workers. It also involves a vision that provides new direction to the organisation. Resources are central to the effectiveness of any programme along with teamwork to implement the programme. LIS professionals who are competing with IT workers must ensure quality in their work, product and service. TQM stimulates them to give the best to the society.

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A Professional Insight into Total Quality Management in Library Services

MANISHA SAKSENA

ABSTRACT

The paper pier points the roles, areas, functions, responsibilities and attitudes which will be starting and focal points for introducing Total Quality Management in a library. The prominence of shift in outlook, management style and work culture has been emphasised and necessary factors, steps and routines required in this direction are clearly outlined.

1. INTRODUCTION

In the present competitive age quality is the prime concern for any industry and it gave birth to the concept of TQM. The days are gone when librarian had to simply issue and return the material available in the library or just take care of the valuable manuscripts and other reading material in the library. But today when the technology has crept in the information sector, libraries no more remain mere storehouses of books but they are formally baptised as library and information centers, data centres, data banks etc. LICs are the places where the staff serves not only the readymade information but generate information, repackage it according to the requirement of the clientele. However, information overflow, typical nature of information need, allied and related subjects, amalgamated and scattered information, scarcity of resources and emphasis on quality, insistence for electronic sources have perplexed information professionals.

In this scenario the main task is to keep abreast of the modern technology and train the manpower accordingly because without technology they won't be able to make good of the modern technological sources and information deluge.

TQM is "a systematic process which focuses on understanding customer needs and improving customer services" (Stutz and Cundari 1995). The implementation of TQM in the Deveraux Foundation's Professional Library, for example, was found to be a useful way to evaluate the quality of library services and provide goals for improvement (Stutz and Cundari). One especially beneficial aspect of TQM is its emphasis on continuous improvement. Now that the system is in place, the Deveraux Foundation's library staff expects to continually evaluate and improve library services.

2. TQM AS CONCEPT

The simple meaning of quality means virtue or nature or characteristic of an entity. But in significant meaning it is related to something of good, grade, excellent and the upper status. When we think of quality we suddenly think of something better than what it is. TQM can be applied in any concern or the service industry. As TQM is one of the ways of management which can be achieved with human resource management *i.e.*, training of staff, developing good communication skills, leadership and encouragement of colleagues and staff with interviews and admiration. The spirit of team work figures prominently in the mission of TQM, which enhances mutual relationship among staff. Total Quality Management help achieve following objectives:

- Continuous improvement
- Market compatibility
- Personnel development
- Personal development potentiality
- Customer satisfaction
- Constant touch of competitive market
- Good revenue booster

Total Quality Management is a structured system for satisfying internal and external customers and suppliers by integrating the business environment, continuous improvement, and breakthroughs with

development, improvement, and maintenance cycles while changing organisational culture.

International Organisation for Standards (ISO) gives the definition of TQM as "A Management approach on quality based on participation of all its members and aiming at long term success through customer satisfaction and practices to all members of organisation and to society."

3. TQM IN LIBRARY AND INFORMATION CENTRES

In first instance TQM sounds as a management terminology. But when we go through its components it is proved to be lucrative to any sector which wishes to cater significantly to its clientele. Though it is very much beneficial to the service industries like library and information centres it has not been implemented extensively even in the renowned and prime institutions and organisations. As stated earlier the mere implementation has its duo benefits; (*i*) it catches more and more customers; and (*ii*) it enables one to sustain in the market by the regular improvements in the product/services. Sinha Thakur emphasises TQM in library and information centres because of number of reasons as:

- Better product design,
- Developing an inventory of all the documents available,
- Developing databases which include records for all types of information sources,
- Facilitating through a variety of tools that can provide access to universal publications,
- Improving quality information analysis and consolidated product,
- Improving skills of end user for profitability with information systems and services,
- Integrating and networking all library resources into serviceable resources for user,
- Reduction of complaints from clientele,
- Efficient utilisation of manpower and technology, and
- Building confidence among users as well as staff.

To implement TQM in libraries the librarian has to play leading role. He should make his colleagues convinced of the concept of TQM. He

should make them aware of this notion through mutual discussion, formal training, case studies, theoretical lectures, notes. They should visit the libraries where TQM has been already implemented. Librarians or head of the library should plan the infrastructure for implementation of TQM with minimum configuration. On the other hand the parent organisation is also to be convinced for the new management culture of the library. Librarian can carry our comparative case studies of TQM implemented library and library without TQM implementation. This will encourage staff as well as users of the existing systems.

To ensure Total Quality Management of library and information services librarian and the staff should engross themselves in following activities:

- Identifying users
- Identifying users' information needs
- Provide wide choices for selection (if choice can be altered)
- Develop and maintain swiftness and promptness in service delivery
- Prepare policy framework for quality
- Plan a strategy for information generation and repackaging
- Share knowledge for saving resources and money
- Plan effective marketing strategy for value added services
- Keep the sources updated
- Personal interaction with readers
- Developing extensive reading habits
- Developing efficient initiative ability
- Cultivating various areas by survey, study and reading
- Procure recent and latest sources of information
- Devote special attention to each and every activities of libraries *viz.*; cataloguing and classification, acquisition etc.

These are the factors, which are significant for implementing TQM in library. Apart from all these the prime factor is the personal interest of the librarian and his ability to take initiative to implement quality management of services and then maintain quality forever.

4. CLIENTELE ROLE

Selective dissemination of information and current awareness services are the best tools to identify the requirements of readers and to

attract customers to library services. The optimum customer satisfaction can be obtained through skilled staff, capacity of good communication, ability to take initiative, personal interaction without hesitation, organising ability, implementing latest technological sources, constant survey of customers' desire.

Any service organisation has to depend on the user/customer feedback because it is customer who generally informs about the same product of other company with its merits and demerits which guides businessman to modify his product accordingly. On the other hand customers are the persons who encourage the individual staff more than the head of the departments. It is apt to claim that customer is God and his guidance can improve the image, profit and fame of the organisation and individuals also. At the operational level we need to be well-organised, efficient and focussed; ensuring that all products and projects we deliver to clients are of the highest quality. This involves a range of formal and informal processes, and explicit and evolving standards.

5. EVALUATION

To ensure quality one should decide criteria for evaluation of a product as well as very strict quality control standards. We can also develop management information systems that allows us to monitor work flow and document production processes.

6. IN HOUSE PRACTICES

Librarian and staff of a LIC can practice their ideas for quality services through;

- people talking to each other informally about projects they are doing;
- regular staff meetings in which we will try to draw out the 'lessons learned' from projects that went well (analysing what didn't work so well is often even more valuable, which requires an environment in which people are comfortable talking about problems with their colleagues);
- specific skill sharing or problem solving meetings, for example, to consider the pros and cons of electronic delivery, whether we need to change our mix of services to committees, etc.;

- broader brainstorming sessions, for example, at the beginning of a new house to anticipate upcoming policy issues and how the incoming members and their particular service needs are going to be different.

With help of this studies we can trace the desire of clientele and easily meet it and we can evaluate the services on the following points to meet,

- always meeting client deadlines;
- clearly organised and well -written (one concrete indicator of this for performance management and review purposes is how much editing or re-organisation is needed);
- thorough and reliable;
- analytically sophisticated and well-grounded in the broader context of the field;
- appropriate to the client's specific needs:
- the needed level of detail and analysis;
- designed to answer the specific question;
- presented in a form that meets what they need—which can range from comprehensive surveys of policies in other jurisdictions to briefing notes they can speak from, from a simple memo they can pass on to constituents to a quick briefing before question period;
- taking all of these factors together, we are really expecting projects that have the highest possible 'value added' for the clients;
- Presenting analysis in the most effective ways—graphics, tables, text boxes, downloading or scanning in material;
- pointing to further useful resources, not just in print but from stakeholders—if electronic delivery is appropriate, then building in hot links to relevant Net resources;
- if clients are just looking for background rather than analysis, still synthesising complex issues rather than simply giving them large amounts of material to read for themselves;
- adding clear conclusions and options if that is what they want;
- briefing clients directly on projects—this can productively happen at both the start of a project to focus the questions and at delivery, to clarify and supplement the written report;

7. INITIATIVE SKILLS

Best skills for interacting with clientele are, to conduct reliable research to know how to thoroughly and quickly review large amounts of information, knowing where to go for the best data, learning how to work effectively with librarian colleagues, understanding how to interpret and evaluate diverse sources of data, and being able to analyse the essential patterns and issues within that information to the appropriate level.The library staff has to cultivate communication skills, tact and good judgement, and the ability to create and sustain positive relations between the library and clients. The goal here is a continually evolving, but directly useful set of best practices and guiding principles for doing research and reference work.

8. QUALITY ASSURANCE THROUGH CLIENT FEEDBACK

The only way we can find out if we really are meeting client needs is to ask them. However, resources may not always allow for expert consultants or comprehensive surveys and we may have to be modest with our methods. Cheap and effective ways of keeping in touch with clients include providing easy-to-use client feedback forms with our projects and on our site, small-scale but well-focussed interviews, encouraging and collecting informal anecdotal feedback, good service-use statistics, and simply talking to clients all the time in the course of our work.

Howsoever we do it, client service evaluation is the final check of our quality control process. We need to continually make sure that clients are satisfied with and use our services, and we need to feed what we learn from their suggestions and usage patterns back into ongoing service delivery improvement and product development. This also means responding decisively to any client concerns or complaints.

9. STRATEGIC PLANNING

How do we ensure our services are of the highest quality in a rapidly changing world of rising client expectations, tighter deadlines, new information technology and exploding information resources? Meeting that challenge – ensuring our research services really do meet client needs involves doing three things really well:

- Starting from sound strategic planning: knowing what our clients expect and need, and developing the best mix of services and products to meet those needs;
- If the strategic level is about making sure that we are doing the right things, then we also need to make sure we are doing them right. This is about various internal processes, checks and balances, standards, tools and techniques. But while these processes are generally what most discussions on quality focus upon, sometimes these are not enough.
- Ensuring quality is not just about checklists and databases, but also involves creating a work culture and environment that support innovation and imagination, that is always looking for ways to add value to what we provide to clients.

In other words, quality control depends upon a number of interrelated factors, ranging from strong commonly held values, a client-driven work culture, clearly articulated service principles, explicit standards and processes, an environment that supports innovation and collaboration, knowledge sharing and teamwork, defined competencies, and sound hiring and professional development strategies

The starting point for quality control is strategic — making sure that we are providing the best mix of products and services for our particular client group and our available resources. That involves a number of things, best seen as a continuous planning and implementation cycle. It starts with needs assessment to determine exactly what clients do need and how their needs are changing. We then build these findings into our product and service delivery system. The next stage is a ongoing process of service evaluation: finding out how clients are actually using our services and products and what they think of them (in fact, finding out how our clients define quality and how effectively our services meet their standards). We need to understand how well what we are doing really meets client needs.

This evaluation process isn't just about keeping clients satisfied. It is really about understanding our clients better to guide continual improvements and innovation.

10. KNOWLEDGE SHARING

Some of the knowledge management tools we use are:

- A text and document management system to be able to draw

effectively on work we have already done in particular areas—so we aren't reinventing every project from scratch and can build on our accumulated expertise;

- A staff Internet which serves as a discussion and exchange forum, a posting place for various short-cuts, information resources and research strategies, a repository for lessons learnt and best practices as they evolve, and an easily accessible place for staff to find guidelines and practices we have solidified;
- A database to capture our own lessons learn on client services and the anecdotal feedback and suggestions we are getting from clients.

11. MANPOWER

We can not survive without the best information technology, well-deployed to support what we do. But the most important asset of libraries is in fact our human capital; the skills, experience and aptitudes of our staff.

As always, we start at the strategic level: what are the core competencies we need, to be able to provide the identified services? We then hire people to fill the particular specialised niches to build up that range of expertise and capacities. In addition to specialised expertise and overall research skills, we also look for the kinds of judgement, communication, diplomatic, innovation and team-building competencies discussed earlier. Finally, hiring strategies must also look ahead, to the skill sets we will need down the road. This means looking for new people with both specific expertise and the more general adaptability and flexibility to acquire new skills and capabilities to meet changing organisational requirements.

12. REVOLUTIONARY AND INNOVATIVE THINKING

As we are supposed to share knowledge and exchange each other's experiences, strengths, and expertise. Our particular structure of an integrated branch of researchers and librarians is designed to support a smooth continuum of services from the clients' point of view. What is important is effective teamwork and collaboration, and assigning the right person(s) for every project based on their expertise. Drawing

on many people for leadership, and giving staff lots of scope for autonomy in their day-to-day work, helps give everyone a stake in innovation. We also need to ensure innovation and ideas are to be recognised and rewarded. Such collaborative work and team culture is common in the knowledge industry and is designed to encourage individual initiative and autonomy for front-line service providers and support flexible planning and continual innovation.

13. CONCLUSION

Modem management technology and information technology play very crucial role to achieve TQM in library and information centres. Libarian should develop immense patience in himself to pacify his readers and understand them as actually as they are. Knowledge sharing and cooperative management of more than one library, dealing with similar objectives, is also a helpful tool for cost benefit quality management. Electronic information sources provide prompt and reliable information which enables cost effective analysis of quality in which today's customer is at optimum level of satisfaction. Though customer satisfaction is the key to success in matter of TQM but other factors like technology. communication skills, initiative abilities, oraganising capacities, current awareness can not be ignored.

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Application of the Concept of Total Quality Management in Library and Information Services: A Feasibility Study

G.E.P. ABBULU AND G. SURYA RAO

ABSTRACT

The concept of TQM is a recent development in management science as a quality improvement programme for any organisation. Quality is a measure of the achievement of an organisation in terms of customer satisfaction. It relates to the quality of production and also to every aspect of service. Since the library is also a service institution, the feasibility of implementing the TQM philosophy in library procedures and services is attempted. The attempts so far made in adopting the concept of TQM are described.

1. INTRODUCTION

The success of a library or any information center largely depends on the quality of services it renders to its users. Managing a library as a social institution involves a specialised and complicated tasks. The concept of Total Quality Management (TQM) is a recent development in management science.

It is a quality improvement programme in any social organisation. Since a library is also a social organisation, an attempt is made in this paper to explore the feasibility of implementing the principles associated with TQM philosophy to render qualitative services to its users.

This paper is prepared, collaboratively, on the basis of the documented literature available to us, mostly from printed books and articles from journals, the references of which are given at the end; and on the basis of observation and experience in our university library

system; and oral interviews conducted in the libraries elsewhere.

Before going into details of the study, it is desirable to understand the concept of TQM. The concept of TQM is a natural evolution of management thought. It is a management philosophy which is driven by customer needs and a commitment to continual quality improvement. It is a system which focuses on processes as well as products, with customers, staff participation, and continuous evaluation of its success.

2. QUALITY

Quality of a person or a thing is a characteristic. It may be inherent or acquired. It determines the nature and behaviour of a person or a thing. People generally associate poor quality with defects such as scratches, cracks, missing part etc. in products, and of persons in their general conduct or behaviour patterns.

Quality is a measure of the achievement of an organisation in terms of customer satisfaction. It is a continuous and unending process. Quality of an activity changes with time, environment, customer's reaction and several other factors. Organisations have to respond to any such change that takes place in any aspect of work.

3. TOTAL QUALITY APPROACH

The quality in relation to customer satisfaction implies that quality is not restricted only to the quality of production but also to the aspects of service. For instance, an organisation is considered as not giving satisfaction to customers if the staff are unfriendly or unhelpful when dealing with customers. This act will be regarded as 'poor quality service'. For achieving total quality every aspect of an organisation is to be given equal attention. This concept of 'Total Quality Approach' is fundamental aspect of 'Total Quality Management'.

4. TOTAL QUALITY MANAGEMENT

Mainly two styles of management are in existence. They are: 'Scientific Management' and 'Participative Management' and these are developed by USA and Japan respectively. In Scientific Management, managers and specialists are vested with the function of decision-

making and problem solving. The workers have no chance to take part in decision-making. They are confined only to the specific jobs allotted to them. This results in dissatisfaction in the minds of the workers which ultimately reflects in form of degradation of quality of the organisation. On the other hand, 'Participative Management' emphasises that the individuals will perform their duties efficiently if they are given chance to participate in every activity of the organisation including decsion-making.

5. THE QUALITY CIRCLE

Kaoru Ishikawa, a Japanese management scientist, combined all the good qualities of both the styles of management to form a new concept called as 'Quality Circle'. The Quality Circle ensures staff participation in full measure towards achieving the targeted goals of the organisation.

The Quality Circle is a small group of people who form a team consisting of 3 to 12 people from the same work area, that is, who perform the same or similar work. They meet regularly and voluntarily without any compulsion. The duration of the meeting is normally one hour or proportionate to items to be discussed. Further, the meetings are held in paid time, treating it as official routine, under the leadership of their own supervisor. The Circles identify, analyse, and solve some of the problems in their own work. After thorough discussions over a period they present their ideas in the form of recommendations to the management or, wherever possible, implement the solutions themselves. Basing on the concept of 'Quality Circle', the Americans came up in 1985 with the concept of the 'Total Quality Management' as the best approach for successful management. TQM suggests that quality is the responsibility of everyone from the lowest rung to the highest.

6. DEFINITIONS OF TQM

There are a number of definitions given by different writers and a few of them are as given below:

> O'Neil defined TQM as 'a system that introduces and uses customer-driven concepts, processes and tools, and continuously seeks to measure its success at meeting customer needs and

improve upon its processes. It involves total organisation participation and customer focus'.

According to Joseph R. Jablonski, TQM is 'a co-operative form of doing business that relies on the talent and capabilities of both labour and management to continually improve quality and productivity using teams'.

To Zabel and Avery TQM is 'a management style in which processes are examined and refined with the goal of improving the performance of an organisation'.

Barnard and Jurow describe TQM as 'a system of continuous improvement employing participative management and centered on the needs of customers'.

In the ISO (International Organisation for Standardisation) 8402 TQM is defined as 'management approach of an organisation centered on quality based on the participation of all its members and aiming at long term success through customer satisfaction and benefits to all members of the organisation and to society'.

Thus, a good number of definitions of TQM are available in the management related literature and these definitions vary from scholar to scholar. Nevertheless, all these definitions have certain elements/ features in common and they can be stated as follows:

(*i*) TQM has intense focus on the customer. It aims to satisfy customer's need and add value to products and not their cost. This is the right way to satisfy customers and thereby to lay a strong foundation for the future.

(*ii*) TQM is improvement in the quality of everything the organisation does. Quality relates not only to the final product but how the organisation handles deliveries; how fast it responds to complaints; how politely the enquires are answered; and the like.

(*iii*) TQM is concerned with continual improvement. It is commitment to never being satisfied. 'Very good' is not good enough. Quality should always be improved.

(*iv*) TQM requires that total costs be reduced by doing things right the first time and every time.

(*v*) TQM advocates avoiding wastage by eliminating erros. There-

fore it becomes essential to do the right things as well as to do things right.

(*vi*) TQM uses statistical techniques to measure every critical performance variable in the organisation's operations. These performance variables are then compared against standards or benchmars to identify problems. The problems are traced to their roots, and the causes are eliminated.

(*vii*) TQM is 'total participation'. It involves the employees in the improvement processes. It is the behavioural aspect of quality of everyone working in the organisation, without regard to status, position and controlling power of the staff. Teams are widely used in the programmes as empowerment vehicles for finding and solving problems.

7. PRINCIPLES OF TQM

The management scientists have also derived certain principles from the philosophy of TQM concept and they can be described as follows:

7.1 Leadership

Effective leadership is the foundation for TQM. Top management should provide the leadership for quality awakening in the organisation. They should evolve effective plans and provide leadership in achieving the objectives.

7.2 Internal and External Customers

The external customers are the outsiders who buy the organisation's products or services. The internal customers are the staff of the organisation including those not in direct contact with the external customers. These staff interact with other staff as they are involved in dispensation of services of the organisation. In this way the customer orientation can pervade the organisation.

7.3 Customer Satisfaction

The customer has to decide what the standards should be and not the supplier/producer. If the organisation decides the standards, the product may not satisfy the customer's requirements. Therefore, quality is customer defined.

7.4 Performance Measurement

Performance measurement needs to be based upon timely measures and feedback on performance through superior quality information systems.

7.5 Measure of Success

Every organisation has to define what is the criterion for success in their operations and how to measure it. For instance, one of the measures is sales of products and the resulting profits. Thought it is difficult to measure the customer's satisfaction, it can be measured through indirect indicators such as increased sales, repeated orders, exports, etc.

7.6 Continuous Improvement is the Goal

Continuous improvement should be the responsibility of everyone in the organisation. The organisation should not be satisfied with one-time success. It should aim at sustaining success through continuous improvement, because customers will expect still better services and products.

7.7 Training and Education are Essential

The Manual specifies the jobs and what they are supposed to do and how they can do them. The employee should be educated and trained in their trade; otherwise they cannot understand the documentation and manuals.

7.8 Communication is Essential

Right communication is to be maintained to carry out the jobs in the right way. Manuals and other such documentations help to achieve proper communication. The organisation should also improve communications through newsletters, notice-boards, problem solving sessions and departmental meetings etc.

7.9 Attitudes Towards Quality

Every employee should develop an attitude to improve the quality of the organisation.

7.10 Team Work

The organisation has to make every effort to mould the employees to

work as a team. It is the only way through which an organisation can achieve its objective and practice TQM. Recognition of achievements is also equally essential for the success of TQM programme.

7.11 Employee Involvement

Employee involvement means that each individual must take the initiative and rely upon someone else. To achieve this, the organisation needs a culture which encourages this behaviour. Everyone must understand that they contribute equally and can only succeed through co-operation and support.

8. BENEFITS OF TQM

In the light of the aforesaid elaboration of the concept of TQM, the following benefits can be derived:

(*i*) Work itself becomes more interesting through a greater involvement of employees.
(*ii*) Increase in general productivity.
(*iii*) Less absenteeism because of greater interest in job satisfaction to employees.
(*iv*) Fewer grievances among the employees; and
(*v*) All-round greater team spirit

Thus, all these aspects of TQM are to be understood by every employee so that they can create a new culture that leads to a great success of the organisation.

9. IMPLEMENTATION OF TQM IN LIBRARY AND INFORMATION SERVICES

The concept of TQM can also be applied to any administrative process and service oriented organisations or institutions like hospitals, libraries etc.

A successful implementation of the concept of TQM in library/information services needs to start with the identification of the services which conform to the features of TQM philosophy.

They can be described briefly as follows:

9.1 Quality Aspect of Library Services

In any service environment quality is related to speed, timeliness,

accuracy and completeness. In the context of library/information services, quality conforms to user's requirements of information. This is measured in terms of precision, accuracy and timeliness of provision of information. To ensure continuous improvement in the services, some meaningful performance indicators are to be introduced.

9.2 Change in the Mental Attitude of the Employees and the Executives of the Library

The successful service requires changed attitude of the employees/ and their executives of the library towards their work. Each employee has to contribute his/her best for achieving the objectives of the department in which they work, which in turn contributes for the overall objectives of the library/information centre.

9.3 Customer Segmentation in Terms of their Needs and Service Strategies to each User Segment within the Library Constraints

A library may function under certain constraints like finance, personnel, documents and databases, management policies etc., and for a library it is never possible to satisfy all users. But users' needs are not common and static. They keep on changing from user to user and also from time to time. The changing needs lead to the change in strategy towards achieving the goals of user satisfaction. Therefore, it is essential to segment users. For example, a university library can segment their users as faculty members, research scholars, post-graduate and under-graduates students, and supporting staff. The library has to provide to each segment of users, on the basis of their information needs within its limitations.

9.4 The Support from the Management of the Library

The library management should decide the strategies as well as promotional services to be provided to each user segment. Once the strategy is decided, each employee has to strive for its effective and efficient implementation. The management has to promote and support participative activities of the employees and to respect their individuality so that the employees find their work worthwhile and meaningful. The employees must have sufficient autonomy to be able to work freely on their own initiative. This will ensure improvement of quality of work and their creativity.

Thus, all the above aspects of library services are compatible with the principles of TQM. Therefore, with the implementation of the concept of TQM a new culture can be created.

10. THE IMMEDIATE EXIGENCY TO ADOPT TQM PHILOSOPHY IN LIBRARIES

The modern society is undergoing 'information revolution' with increasing specialisation and the discovery of new relationships among many disciplines which give rise to a wide variety of new information/knowledge in large quantities known as 'information explosion'.

The present electronic age is slowly heading towards 'paperless society'. The recording of information in multi-media such as the graphite plates, the magnetic tapes, the micro-films, the computer files on the floppy disks and CD-ROMs etc., has been available for quite sometime. The emerging information technologies with various components like the micro-computers, telcommunications, electronic mail (E-mail), conferencing systems, CD-ROM, Optical disc formats, fascimile equipments etc. are being introduced in library operations and services. Another feature is the increase of user community with a variety of information needs.

These developments have greatly contributed towards a fundamental change in the management of library operations and services. This situation in its turn affects the roles and responsibilities of library professionals. It is against this background that the philosophy of TQM to achieve 'total quality' in every aspect of library and information services has become relevant, meaningful and desirable.

11. EFFORTS MADE TO IMPROVE QUALITY IN LIBRARY AND INFORMATION SERVICES

Achieving quality in library and information services has become a continuous activity of professionals for the last several years. Evaluative studies in several aspects of information storage and retrieval, user studies to orient information systems and services to user needs, citation practices to measure contributions of individuals, institutions and journals titles in different disciplines have developed as tools and techniques not only to create an awareness to produce work of high quality but also to evolve several useful standards and specifications for measuring performances.

Human resource development programmes are being implemented to motivate information personnel to give their best. The library and information schools have started to reorient their curricula to produce a new class of information professionals who can meet the challenges of high-tech information systems and services. Continuing education programmes in specialised areas are being developed to keep the entire staff well-informed about current development in the field.

The implementation of Dr. Ranganathan's suggestions of 'job analysis' and 'job description' in the personnel management of libraries; the use of 'operation research' as basis for decision-making; the 'management by objectives' for achieving efficiency and providing motivation; the use of the studies made by Evans in relation to libraries; the use of the International Standards Bibliographical Description; the Brandford's law of Distribution with regard to publication of journal articles; the use of Bibliometrics in the quantitative analysis of the properties of information etc are all reflections of the principles of TQM in library and information services.

Michael Cooper has started the implementation of TQM principles in some of the Austrian and overseas libraries as outlined below:

In the USA, TQM is adopted by the libraries of hospitals, the military and the universities and in the information centres of commercial organisations. In the Harvard College Library the TQM is applied in the organisational development goals.

The Oregon State University libraries have been creating a culture with TQM philosophy in developing customer service and quality improvement in every aspect. As a means of improving user services and staff morale, TQM principles provided the basis for a complete reorganisation of the Davis Library of Samford University. The Library of Georgia Institute of Technology developed customer needs of content-based value added information services. Monash University Library in Australia, improved the acquisition and processing, staff participation with the help of TQM principles. The National Information Resource Centre of Australia is able to enhance information services and products with the implementation of TQM.

Similar management principles have been followed in the libraries in U.K. such as the University Library of Melbourne, the State Library of Victoria, the Defence Regional Library of New South Wales etc.

12. CONCLUSION

The concept of TQM is a recent management philosophy which helps to achieve excellence in any organisation and also in library services. In a library the employees need not work extra but have to perform the same functions in different ways in the new cultures. In the same way improving quality does not mean additional work but only improvement in the ways of work. To achieve perfection 'do your very best until the very end'.

Many libraries have already benefited by adopting the concept of TQM in their procedures and services. Still a large number of libraries have to take the advantage by resorting to this philosophy and the time has come to recognise the importance of the TQM philosophy in libraries in view of the emerging demands in the contemoporary information environment.

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Essence of TQM for Library and Information Services

K.C. DABAS AND SEWA SINGH

ABSTRACT

This paper is designed to conceptualise various terms, elements, contents, objectives and process of TQM which are very critical for their successful implementation in the libraries and information centres. It also briefly outlines the relevance, strategies, tools and techniques of TQM and tries to integrate the same for managing change and qualities in Indian libraries. After discussing Qs. of TQM the paper begins with As and ends with the Ts of TQM.

1. INTRODUCTION

Amidst drastic and dramatic changes in global information environment, libraries and information centres have become very complex systems. This complexity is due to inability on the part of libraries to cope up with requirement with regard to acquisition, organisation and dissemination of printed as well as electronic information as per needs, desires and expectations of library users. The customer has already assumed the status of king in commercial and manufacturing sector. Now 'customer delight' has become the buzz word instead of 'customer satisfaction'. Today quality and customer service play key roles in the survival and success of orgnisations. This has forced organisations to adopt appropriate techniques, tools and strategies for quality and customer service which are compatible with the environment.

These business like trends have already started making inroads in library and information sector. Library users are now demanding

quality services which is confirmed by various studies that have been carried out in recent years. It is always possible to achieve quality at high cost. But this is not exactly the solution needed in this phase of resource constraint. Cost conscious regime where efficiency, effectiveness and economy have become the slogans the need of the hour is quality and customer service at low cost. It is in this context where quality control, quality assurance and total quality management step in. Libraries and information centres do have some internally focused quality control routines which are not compatible with the needs of present environment and need to be supplemented by externally focused strategy or intervention.

2. TOTAL QUALITY MANAGEMENT

Quality is the beginning and end of TQM. Orr (1973) was the pioneer who introduced the concept of 'library goodness' with the help of quality (capability) and value (beneficial effect) of library.[1] Library goodness is the ultimate objective of libraries and information centres and TQM is the means to that end.

2.1 Quality Control

Quality control evolved from inspection. It serves as a measure to check and detect the internal process and quality failure rate. It is useful in technical and administrative work of the libraries.

2.2 Total Quality Control or Company Wide Quality Control

It involves every section, every work, every activity, every process and every person of the library for the total satisfaction of the internal and external customers of the library.

2.3 Quality Assurance

Quality assurance involves planning and designing quality into all the processes of libraries. It uses feedback from users and staff. It deals with correction as well as redesigning of system so that failure is not repeated. ISO-9000 is a quality assurance system which assures input, process, output, and proactive assurances through standards and specifications. Quality assurance uses statistical process control (SPC) and statistical quality control tools.

2.4 Total Quality Management

TQM evolved from a narrow technical concern (inspection, quality control, quality assurance) to a broad, holistic, strategic and customer oriented management framework encompassing different management issues.[2]

2.5 Quality of Working Life (QWL)

QWL is the quality of relationship between library employees and the total working environment. QWL has positive relationship with total performance of the library. QWL is the strategic architecture in TQM framework.

2.6 Quality Network

All the processes from a request for book to its being finally made available to the borrowers involve several customer/supplier interactions. These customer/supplier interactions are known as quality chain or quality network.[3] Quality management is the management at every level of quality chain or network of library activities.

2.7 Quality Instruments

Quality instruments such as acquisition policy, staff manual, budget allocation policy, role analysis, job analysis, job description, library automation policy etc. help in the improvement of library quality.

2.8 Quality Circles

A small group of library employees related to similar work who voluntarily meet regularly for about an hour every week to identify, analyse and resolve work related problems. This helps in the improvement of performance and enrichment of work life.

2.9 Quality Management

Quality and management were two separate disciplines. They got closer during 1980s and generated so many success stories. Quality management has two main streams. Western quality management is based on Deming, Juran and Crosby's philosophies and Eastern quality management is based on Kaizen and Gemba Kaizen. Gemba is the real place of developing, producing and selling library services, products and consulation.

There is no consensus regarding definitions of TQM. However it is a management philosophy embracing all activities and practices through which the needs and expectations of the customer and the community, and the objectives of the organisation, are satisfied in the most efficient and cost effective way by maximising the potential of all employees in a continuing drive for improvement.[4]

There are many As, Cs, Es, Ps, Ss, Ts and Ws which are very critical to the success of TQM in the library and information services.

3. As OF QUALITY IN LIBRARIES

3.1 Accessibility

It is the ease, convenience, comfort, excitement and interest in using the printed, electronic and online information resources of the library. It includes building, equipment and library staff also.

3.2 Availability

It is the proportion of documents made available to users on request. It implies physical availability of all the resources of the libraries.

3.3 Applicability

Accessibility and availability of library resources enhance applicability or usability of resources. First three laws of library science enhance usability of library. Usability depends upon the quality of library.

4. Cs OF TQM

4.1 Commitment

Commitment is putting the user needs ahead of one's own. Commitment is far more better than interest. It implies dependability, reliability, consistency, predictability, caring, empathy, a sense of duty, sincerity, character, integrity and loyalty.[5]

4.2 Competence

Organisational strength and weakness of libraries are determined by the competence and quality of human resources of the libraries. It implies mental agility and compatibility with the environment.

4.3 Continuous Improvement

TQM is a journey not destination. Continuous improvement in standards and maintenance of standards is the objective and cost, quality, delivery, and user satisfaction is the outcome. Plan—Do—Check—Act cycle of Deming with its performance and relevance loop helps to improve quality of libraries.

4.4 Culture

Culture is the sum total of the values and belief that most members of the library share. It is the soft outcome and essence of TQM contents. Work culture and work ethics are important for TQM's success in libraries.

4.5 Customer Focus

It is the epicenter of TQM. Customer is placed at the top of TQM frame work and next are those who serve customer, and management is there to serve frontline staff of libraries.[6]

4.6 Customer Service

It is to delight the customer and not merely to satisfy him. The ABC of customer service is Attitude, Behaviour and Change. Attitude is the mental state that both influences and is influenced by thought and action. Behaviour is the projected action at work that influences colleague and customer directly. Body language accounts for more than half the message already being communicated. Change is the only constant today. It is the revolutionary aspect of customer service which requires continuous feedback, complaint and appreciation. In depth analysis of customer reactions to the services provided and constant improvement on the basis of feedback can ensure the delivery of quality service. Personal (interaction), Procedural (process) and Professionalism (courtesy) are essential to provide qualitative services, products and consulation as per customer expectations.

5. Cs OF CUSTOMER SERVICE

(*i*) Continuous information collection about customer, (*ii*) Customisation, (*iii*) Connectivity, (*iv*) Consistency, (*v*) Contextual quality, cost and delivery, (*vi*) Collaboration, and (*vii*) Communication.

6. Es OF TQM

6.1 Efficiency

Efficiency is doing things right. It is the amount of time spent per transaction in giving a service or performing an operation. It is comparison between inputs and outputs.

6.2 Economy

It is the proportion of the library budget allotted for a service, product or operation.

6.3 Effectiveness

It is the criteria to judge how for the expressed demands of the users have been satisfied. It ignores the latent demands. *Cost Effective* is the relationship between effectiveness and the cost involved in achieving this level. Cost and value of products and services to the users be quantified on the basis of some uniform standards. *Cost benefit* analysis justifies the expenses incurred on a service by the benefit derived from it. *Cost* is unit cost per service or operation. *Cost effectiveness* is cost per user.

6.4 Empowerment

Learning organisation is a pre-requisitive for empowerment and empowerment is a step by step process of organisational learning and individual development. It helps to get the best out of staff. Empowerment allows the employee to take independent decision with responsibility for the consequences either good or bad.[7]

7. L OF TQM

7.1 Leadership

Leadership is an inter-personal influence exercised in a situation and directed through communication process towards the attainment of goals. The style of leadership is the way of action through which the leader tries to attain goals with his influence. It is beyond power and authority. Administrator, manager and leader are the three stages of leadership.

8. M OF TQM

8.1 Measurement

Lynch (1983) defined measurement as "the process of ascertaining the extent or dimension or quantity of something", performance as "the doing of something," evaluation as "the process of determing whether something is what you want it to be", and effective as "referring to something which does well that which it is supposed to do".[8]

Kaizen's *i.e.* continuous improvement based on Japanese culture and philosophy of total life suggested three-Mu *i.e.* Muda (waste), Muri (strain) and Mura (discrepancy). The implication of these three-Mu for library and information services is that there should be no wastage of library resources *i.e.* men, material, methods, machine. There should be no strain on library resources and there must be nodiscrepancy in role, job and work of library resources.

9. Ps OF TOTAL QUALITY IN LIBRARIES

Total quality in the libraries cover the entire gamut of library activities. Being dynamic in nature, it is associated with all the products (catalogue, current content list, new addition list, bibliographies, handbooks of information, brochure, library bulletins, photocopies, computer printouts, various forms, performas, leaflets, orders, memos, correspondences etc.); provision of services; processes, people and their relationship and place (environment) that meet and exceed user expectations.[9] Likewise 5 Ps *i.e.* People, Place, Price, Promotion and Product are important for marketing of library and information services.

10. Ps OF TQM

10.1 Pride of Workmanship

Pride of workmanship is another important aspect where every task master of library takes pride in doing his best. The library staff should strive to achieve excellence in their work with the feeling that every product, service and consultation of library carries the pride of library staff.[10]

10.2 Performance Measures

Performance measures are count and combination of counts. They can measure efficiency, effectiveness and user satisfaction. All the three measures are valid basis for the measurement of library quality.

10.3 Performance Indicators

Performance indicators are operationalised as measures of quality. They are more general than measures.

10.4 Performance Dimension

Performance dimension is a broad aspect of library quality which is monitored in assessing quality: It is comprises of more specific items of quality called indicators. Reliability, responsiveness, assurance, empathy and tangibles are the dimensions of library quality.

10.5 Performance Evaluation

The result of measurement can be used to evaluate the performance of a library and thereby it can be decided whether it is what you want it to be.

10.6 Performance Standards

Standards provide subjective data whereas measures provide objective data. Certain agreed upon formulae, when written down explicitly become standards. Standards are the best way to assure quality, and most cost effective way to do the job. Librarians have developed bibliographic standards. Provisions of ISO-9002 can be applied to libraries.

11. S KEYS OF KAIZEN AND THEIR IMPLICATIONS FOR LIBRARIES

11.1 *Seiri* (Straighten up)

Libraries have a large number of mutilated, damaged, obsolete documents, equipments, stationary items. These items should be weeded out and declared as condemned in order to lessen the unnecessary burden on library systems.

11.2 *Seiten* (Put things in order)

It places all documents electronic products, equipments in order so that they may be retrieved easily when needed.

11.3 *Seiso* (Clean up)

It implies keeping all tangible things of libraries neat and clean.

11.4 *Seiketsu* (Personal Cleanliness)

Library staff need to develop a habit to remain clean, tidy and well groomed.

11.5 *Shitsuke* (discipline)[12]

It implies self-discipline and following the systems, processes and rules of the library for total success. It makes librarian's job easy and happy one.

12. Ts OF TQM

12.1 Trust

Trust is the foundation on which TQM is built. Instead of elaborate checks, inspection and supervision libraries need to change organisation culture. It takes time and commitment from top management. Quality emanating from trust endures and is essential for survival and success of libraries and information centres in the new information environment.

12.2 Teams

Teams are the means to bring diverse talents, skills, expertise, experience to the problem solving tables. It is based on the philosophy that none of us is as smart as all of us. Each team has sponsor, facilitator, leader and members. Successful team work requires clear team goals, improvement plans, clear team roles, clear communication, beneficial team behaviour, establishment of rules, knowledge about team process and decision process and scientific methods.

12.3 Training

Training builds quality. But it is often found to be ineffective. The culprit is not faulty training but poor planning and implementation. The trainer may do the bulk of the training, but managerial support is equally essential. Training inside the library may have a lot more impact on the effectiveness of training programmes. Quality training focuses on performance objectives rather than learning objectives.

Training programmes should be preceded by a thorough analysis of the challenges the library is facing. Preparing employees ahead of time is the most effective but neglected means of increasing the effectiveness of training.

12.4 Techniques

TQM requires the improvement of all the processes involved in libraries from acquisition to dissemination of information by reducing variability. There are many techniques to study and analyse the process and to search for improvement. The essence is that whatever technique is used it should be backed by management commitment and good organisation.

- *Brainstorming:* The essence of brainstorming lies in bringing together a group of participants from different department and backgrounds in a non-threatening atmosphere. It is helpful not only in generating ideas but as team building exercise. All ideas are recorded and then evaluated and then participants are encouraged to list the ideas they found most useful.
- *Benchmarking:* The term 'Benchmarking' evolved from total quality movement. It is a method of learning from others who have better processes or techniques and implementing the same in your system. Benchmark serves as a point of references as well as works as a standard by which others may be measured.
- *Organisational Learning:* Organisational learning refers to learning at the system level rather at individual level. TQM in addition to quantifying quality, is also a means of expanding organisational thinking and learning capabilites. Learning helps to understand 'latent needs' of the customer.
- *Reengineering:* TQM is a new type of planned organisational change. Innovation is to effect a change in the established order. But reengineering is fundamental rethinking, radical redesign and breakthrough of the old and obsolete. Library automation *i.e.* computerisation, networking and resource sharing is reengineering.

12.5 Top Management Internal Quality Audit

Financial audit and stock verification is very common in libraries, but

quality audit was very rare phenomenon till the quality system such as ISO-9000 and TQM had not made inroads in information sector. Still, in libraries the involvement of top management in quality audit is very rare. This needs to change because senior staff is responsible for the quality of the organisation. When top management carries out internal audits, they can detect hidden sources of trouble as well as unnoticed strengths. The philosophy should be to find and solve problem, discover and build on strengths and standardise and institutionalise improvements.

12.6 Technology

Information handling activity kept on shifting with technological stage of mankind. Enabling technology has offered enormous opportunity to libraries and information centres. The journey from personal information system to global information system indicates the drastic changes which have take place in information environment.[13]

12.7 Tools

Statistical Process Control (SPC) and Statistical Quality Control (SQC) have been evolved to check the variation in process and quality of products and services. The literature indicates that these can be useful for measuring and evaluating the quality of library system and services. Besides these can help librarians/information scientists to control and improve the quality of library operations and services.

- *Analysis of Variation (ANOVA):* Analysis of variance is statistical technique of studying variability. By this technique, one can examine whether there exist significant differences between two or more population averages. ANOVA is a qualitative analysis which may helps librarians and information scientists to reelect suitable commercially available bibliographic databases. The quality characteristics such as relevance, exhaustivity, accuracy, novelty, utility etc. may help to select the right databases.
- *Pareto Analysis:* Vilfredo Pareto discovered that 20 per cent of the population owned a very high proportionate over 80 per cent of the wealth. When he showed this distribution as cumulative curve it became Pareto's law. There is wider im-

plication of this law in libraries *e.g.* 20 per cent journal as well as books meet 80 per cent needs of library users. 80 per cent of periodical budget of libraries is spent on 20 per cent of journals. Moreover, small quantity of defects in libraries generate a high proportion of quality losses.

- *Control Charts:* Control charts help in identifying problems due to special or abnormal variability with the help of line graphs. These standard graphs have control limit lines at the center, top, and bottom levels. Librarians with fair knowledge of averages, range, variation, normal distribution and standard deviations can apply control charts and check the problems.
- *Cause and effect diagrams of Fisbbone groups or Ishikowa diagram:* cause and effect diagram could be used to isolate the causes of low library use, low level of quality and causes of user dissatisfaction.
- *Process Flow Diagram:* Process flow diagram displays all the processes and steps of an activity or operation. Process flow diagram displays the variation in process and helps to identify the causes of variation in any library activity and operation.

CONCLUSION

TQM is best defined as a philosophy and big umbrella. It is a complete way of managing libraries with focus on customer and quality. Quality is what customer sees, perceives and seeks. Data and information are the means to ensure and improve quality at all stages.

To maintain compatibility of libraries with the environment, the changes in technology, market, quality and cost must match the process of change *i.e.* organisational structure, strategy, staff management and leadership of libraries. Cultural change is the essence of TQM and TQM tools are mere tools for cultural transformation. When a library has everything *i.e.* resources, technology. infrastructure but even then progress is not upto the mark, it is because of culture, values, attitudes, beliefs and myths. Total quality management is cultural specific. TQM vocabulary, professionalism, process orientation, and reluctance of librarians in sharing power with subordinates are the major barriers.

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Indispensability of Total Quality Management in Library and Information Centre

RABINARAYANA MISHRA

ABSTRACT

TQM is a positive way of managing the effectiveness, efficiency, flexibility, competitiveness of an organisation where it is a joint responsibility of one and all.TQM is the ultimate solution to improve the quality of the products and to provide maximum satisfaction to the customers in a business organisation and clientele in LI centre. The paper deals about the application and need of TQM especially in a service-oriented organisation like library and information centre.

1. INTRODUCTION

The era of management irrespective of the type of organisation has brought a revolutionary change. Prior to 1930's the prevailing traditional management system was substituted with scientific management which was in force from 1937 to 1955 and the human relations era started from 1955 which functioned in a democratic way by way of involving the people in decision making and operating process. The concept of Total Quality Management (TQM) devised by W. Edwards Deming, Joseph M. Juran and K.I. Shikara (Moni, 1994, p. 771) came into existence in 1980's which is associated with the quality of products, customer and guarantee.

2. APPLICATION OF TQM

TQM happens to be a positive way of managing to improve the effectiveness, efficiency, flexibility and competitiveness of a business as a whole and it is the responsibility of one and all including all the

sections involved in the process to bring out a qualitative product including the service oriented organisation like library and information centres so as to extend a supreme satisfaction to the clientele. Brookman (1922, p. 283) has viewed that, TQM is a management philosophy embracing all activities through which the needs of the customer and the community and the objectives of the organisation are satisfied in the most efficient and cost-effective way by maximising the efficacy of all the employees in a continuing drive for improvement. The multidimensional functions of the organisation, especially in a library and information centre can only be achieved for value added service through TQM the success of which can be carried out through effective training, dynamic implementation and causative involvement (Rajyalakshmi; 1998, p. 97).

In TQM each string is defined, analysed, measured and improved with the objective of complete elimination of blemish in the process and to subsume the modulating to customer requirements. TQM has now become a new integrated concept and the principal philosophy is that the customer is filled up with utmost satisfaction as regards to service from a service oriented organisation including banks, insurance, library and information centres etc. The progress and regress of a service oriented organisation depends solely upon the customer's delight. In other words, the customer is the nucleus of the organisation. The existence of library and information centres also depends upon the clientele, scientists, academicians, engineers etc. To satisfy the needs of the clientele as a whole, the tastes of clientele are first judged and the menpower employed in the library and information centres satisfy the need of the user with the matching documents or information at a least possible time. The customers, *i.e.*, the clientele must get the value of their money spent for the required information. In other words, the customer or the clientele as the case may be, must be repaid with the qualitative products or the services from the concerned organisation and the library and information centres respectively for the money spent for the purpose. The flow charts (Figures 1 and 2) clearly depict the qualitative measures of satisfaction obtained by the customer or clientele in a business and service oriented organisation and the value of money fatigued for the output respectively.

In the business and service sectors like bank, insurance and the library and information centres respectively, the customers and the

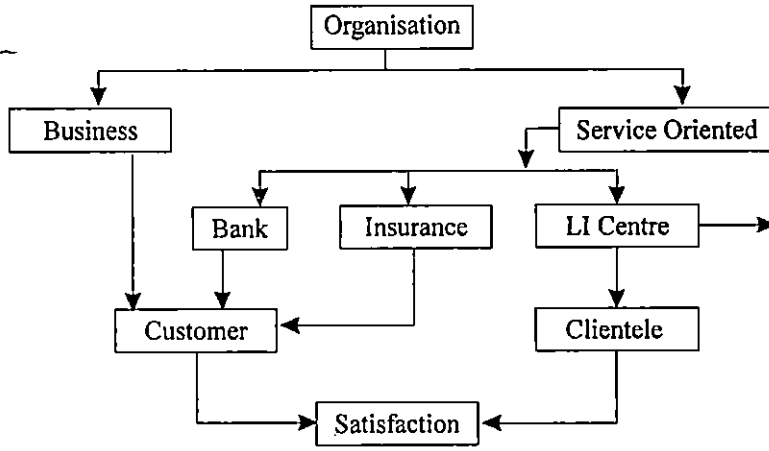


Fig. 1: Flow chart showing satisfaction by the customer/clientele

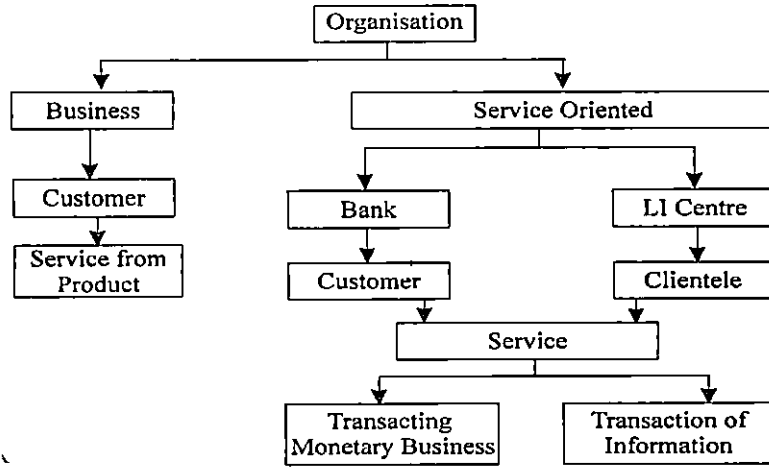


Fig. 2: Customer's/clientele's value for money

clientele are associated with a common cause of interest but with different requirements. In the business sectors, the customers are concerned with the qualitative product with guarantee for the money spent by them but in the service oriented sectors, the customers are

concerned with the best and ungrudging service from the organisation for the money invested or retained with them along with the security where as, the clientele deserves with the quickest, qualitative, pinpointed and authentic service from the library and information centres in lieu of money spent for the purpose to boost research and education.

The implication of TQM during the present days combines theories, models and tools developed by Dr W. Edwards Deeming an American statistician and management theorist (Jurow and Banard; 1993; p. 2).

3. QUALITY CONCEPT

Quality refers to the production of goods and after sales services where the onus lies with the supplier along with the specifications of production or resources available with the service organisation where as the user emphasises on the value of money fatigued in terms of services of the product. Quality service in regards to library is focused to its collection development, available resources, type of services rendered by the library and information centres. If a user of the library or an information centre is satisfied with the desired, pinpointed, authentic information at the least cost of money then, the services of the centres can well be evaluated as high quality service and the way the clientele is treated is known as process. The quality of library service is measured in terms of reliability, responsiveness, assurance, empathy and tangible (Jain and Gupta; 1996; pp. 41–7). Quality service of a library and information centre depend upon the involvement of team spirit, combined effort and observance of all the units along with the expertise hands of the center.

4. CHARACTERISTICS OF TQM

The TQM is justified with the following three principal characteristics.

(*a*) The customer being the nucleus in the system, all out efforts must be enforced to satisfy the customer who is the driving force to move the wheel of the organisation.

(*b*) Quality must be maintained subject to the change on the requirement or complain lodged by the customer;

(*c*) Innovative ideas of the employees of the organisation must be given due salutation along with the ideas of improvement in quality of the services.

5. TQM IN LIBRARY AND INFORMATION SERVICES

TQM can be approached in multifarious ways such as creating commitment, creating cultural changes, effective communication, empowering the workforce, shouldering the responsibilities, statistical process control, application of modern devices in solving problem, designing experiments, quality function deployment, quality productivity improvement process, ISO 9000 and world class quality planning (Rajyalakshmi; 1998; p. 98). However the user's satisfaction expresses the efficiency of TQM. Hence De Lone and McLean have provided a useful grouping of information system success measures in six broad categories such as, system quality, information quality, user satisfaction, use, individual impact, and organisation impact (*Ibid.* p. 101). The implementation of TQM requires a changed attitude of the technical and non-technical force towards their assigned jobs in the field of library and information centre. The quality of services on the basis of newly market-oriented structures have become a stupendous task and thus, a SERVQUAL model has been developed in library and information sector to overcome these problems (Kinnell; 1995; p. 269) which has been depicted in Fig. 3.

Here, the customers/clientele express their feeling about a ser-

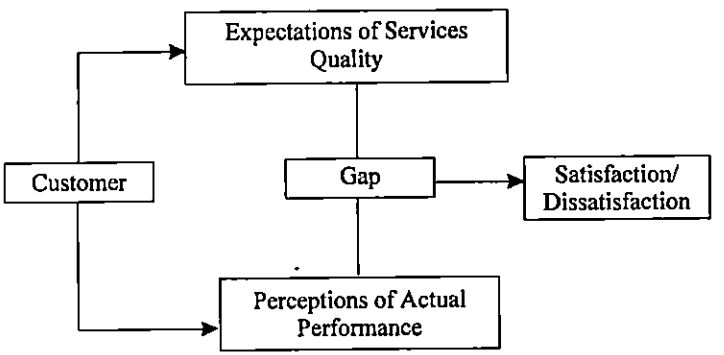


Fig. 3. The Servqual Model

vice through attitudes to it while, their satisfaction with the service usually relate to specific transaction. The successful accomplishing of TQM in library and information services needs certain guidelines such as,

(*a*) Preparation of TQM documentation manuals;
(*b*) Systematisation of steps with uniform procedures for efficient and careful working practice;
(*c*) Elimination of non-value adding activities from every process;
(*d*) Delegation of specified decision making powers down the line;
(*e*) Application of information technology to speedup the work with accuracy;
(*f*) Execution of cost-benefit analysis; and
(*g*) Training to library professionals continuously on library mission for quality control.

6. CONCLUSION

TQM is necessarily a customer/clientele oriented and a quality focused philosophy which involves all units of a library and information centre in satisfying clientele's requirement. It has been defined as quest for excellence. Under TQM, each process is defined, measured, analysed and improved with the objective of eliminating the defects in the process and to comprehend the changing customer/clientele requirements. TQM can be implemented successfully especially in a service oriented organisation like library and information centre through quality management system, quality tools and techniques, and team work along with education and training to the manpower employed in organisation so as to create an air of openness which will make the employee feel inseparable part of the organisation and more importantly, in its decision making process. In the age of information technology TQM has become a demand of the users as right information to the right reader in right time is the need of the hour.

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Total Quality Management and Its Implementation in Library and Information Services

L. VENKATESWARA RAO AND M. SATYANARAYANA

ABSTRACT

The quest for continuous quality improvement leads the libraries to discover new management principles. TQM improves the quality of products and services and provides maximum user satisfaction. This paper states various definitions of TQM. It explains the basic concepts and philosophy of TQM and discusses essential elements and issues related to TQM. While discussing the need of TQM and issues associated with its implementation the paper concludes that TQM serves as an efficient tool to improve and refine the library and information services.

1. INTRODUCTION

Quality of service of any library or information system in terms of its effectiveness in meeting requirements of users can be gauged from the user satisfaction it earns. Implementation of Total Quality Management its the latest concept to achieve this objective. TQM was first initiated and implemented in manufacturing industries to measure quality performance. Later it captured the worldwide attention and is being adopted in many production or service sectors. There is a need to understand, adopt and promote TQM especially because of the changes taking place in the global economy, customers expectations and increasing competitive pressures.

TQM has been defined in various ways such as a search for excellence, creating right attitudes and controls to make the prevention of

defectives possible and optimise customer satisfaction by increased efficiency and effectiveness.

J.S. Oakland (1989) defined Total Quality Management (TQM) is an approach to improve the effectiveness and flexibility of business as a whole. It is essentially a way of organising and involving the whole organisation, every department, every activity, every single person at every level.

Another approach to TQM has been based on the quest for progress and continual improvement in the area of cost, reliability, quality, innovation, efficiency and effectiveness. L.D.Pfau (1989) states that TQM is an approach for continuously improving the quality of goods and services delivered through the participation of all levels and functions of the organisation. These definitions offer functional purposive view of TQM.

TQM can also be viewed as an integration of two philosophies, that is Total Quality and Quality Management. The total quality is a long term success strategy for the organisation. Customer satisfaction, employee satisfaction, product quality at all stages and continuous improvements and innovations are the main ingredients of total quality. Whereas, quality management is the way of working and managing that combines the capabilities of all the employees for continuous improvement of every process with the main purpose of increasing customer satisfaction. TQM, therefore can be viewed as a process.

TQM has been accepted by both service and manufacturing sectors as a systematic management approach to meet the competitive and technological challenges. It redefines the quality with emphasis on customer satisfaction. It is also considered as an organisation system, dynamic systems and functional system. It has evolved through various phases of inspection, quality control and quality assurance. The benefits of TQM are numerous and are being increasingly realised by the organisations.

2. BASIC CONCEPTS AND PHILOSOPHY

It is essential to understand the concept and philosophy of TQM before initiating efforts towards its implementation. It would be difficult for the employees lacking quality culture to understand the significance of TQM that tries to bring a welcome change in the style of management.

Total Quality Management is a holistic system. It considers an organisation as a mutually supportive network of interlinked activities contributing in different ways in creating added value to products and services for the customers at each stage.

The concepts of TQM are simple, straightforward and easy to understand. An organisation needs to identify the requirements of its customers and then make an effort to meet their requirements. The whole process forms the core of Total Quality Management approach. According to Sink (1991), TQM involves the management of atleast five major quality check points. They are (*i*) selection and management of upstream systems (*ii*) incoming quality assurance (*iii*) in process quality management and assurance (*iv*) outgoing quality assurance and (*v*) the proactive assurance. The integrity, methodology and humanity are considered as essential features of TQM. This requires an emphasis on education of employees, management commitment, team work and participation and quality tools and techniques.

Price and Gaskill (1990) project TQM philosophy as complete satisfaction of customer and continuous improvement of ability to satisfy customer in future.

TQM always seeks to maximise the organisation's value through maximising customer satisfaction at the lowest possible cost and continuous improvement in its processes within the organisation collaboration with people.

3. ESSENTIALS OF TQM

TQM puts customer satisfaction as the number one priority. It comprises a set of integrated philosophies, tools, techniques and processes and can be applied in any organisation to accomplish its objectives by creating delighted customers, consistently meeting or exceeding their expectations and creating happy employees.

It is essential to understand key elements of TQM before its initiation and introduction. These elements form the essential core of the TQM philosophy and help to change the attitudes and culture within the organisation so as to create well-defined processes to achieve the continuous improvement of products and services.

(*i*) Customer satisfaction, (*ii*) Quality policy, (*iii*) Internal and external customers, (*iv*) Employee involvement, (*v*) Error-free process, (*vi*) Continuous improvement, (*vii*) Performance measurement.

3.1 Customer Satisfaction

The whole concept of quality is oriented to meet the expectations of customers. The quality is a measure of customer satisfaction. The customer has expectations and perceptions. The expectations are formed before delivering the service and perceptions are created during process of delivering service. Quality service can be achieved by filling the gap between expectations and perceptions. Customer satisfaction has several dimensions. They form the image of the organisation in the eyes of customer. The organisation needs to make an endeavour to enhance this image to build up customer confidence. The customer feedback and employee feedback mechanisms are the essential requirements to create customer oriented quality nature. This feedback mechanism provides an accurate evaluation of the operations of the organisation from both external and internal perspectives. This indicates the effectiveness of an organisation and provide a measurement of customer satisfaction.

3.2 Quality Policy

According to Flippo (1976) a policy is a man-made rule of pre-determined course of action that is established to guide the performance of the work towards the organisation's objectives. It is a type of standing plan to guide subordinates in the execution of their tasks. Quality policy, therefore, refers to principles and rules of conduct designed and formulated to govern the relationship with employees in the attainment of the organisation's TQM objectives.

3.3 Internal and External Customers

Internal customer is an employees of an organisation who uses the output of another employee as input. External customers are those who use the services of an organisation. It is ensured that the service of any organisation towards users is equal. The users may be active or potential. The encouragement should be given to the staff for identifying the users and their needs of different types of sources and services and educate them for utilising the facilities of the organisation.

3.4 Employee Involvement

Employee involvement is essential in meeting the objectives of any

organisation. Each and every employee in the organisation must take the initiative and not rely upon someone else. The employee must understand that his contribution can only succeed through the cooperation and support with other employees in meeting the objectives of the organisation. The most important requirement to make the TQM a success is to have a full management team involved in it.

3.5 Error-Free Process

Prevention to eliminate waste, reduce costs and achieve error-free processes to save the time of the user.

3.6 Continuous Improvement

It is the responsibility of each and every employee in an organisation for continuous improvement of the organisation. Varieties of training courses can develop the skills of employees in contribution of their share for continuous improvement of the organisation. The education, communication, recognition of achievements and team work are often recognised for inspiring employees.

3.7 Performance Measurement

It is essential to develop proper tools and techniques for measuring quality. Performance measurement is basis to the success of the entire operations in an organisation. Performance measurement needs to be based upon timely measure of, and feedback on performance through superior quality information systems.

4. IMPLEMENTATION OF TQM

The acquisition, organisation and serving of information has become a complex task for libraries due to the expansion of universe of knowledge. There is an increasing demand for retrieval of information in the quickest possible time. The economic threat by steep increasing prices of books and journals, declining budgets, fast development of information technology, high expectations of users and quality service and products for survival and growth are the factors forcing the libraries to adopt a sound and new management. It is perhaps more fruitful to consider the following factors for successful implementation of TQM in libraries.

4.1 Defining Quality

Quality has been defined in various ways. In a service sector like libraries, user satisfaction can be achieved by a good qualitative management. Therefore, to avoid some of the problems in defining service quality, teams, departments and individuals need to be assisted in identifying definitions and measures that are appropriate in their context. Speed, timeliness, accuracy, completeness, and speed of response to the requests of users or appropriateness or completeness of search outcome form important factors in library services.

4.2 Clarifying Customers

It is essential to identify the external customers and internal customers and the ways in which the customers can be segmented either on the basis of the service they require or their attitudes to effective service delivery. Although there has been an increasing move towards involving the majority of staff to direct customer service, it remains important for those involved in processing.

4.3. Measuring the Quality

It is considered for the purpose of determining the effectiveness, efficiency value of what have been achieved. This identifies the strength as well as the weakness of any library or information system. There are many approaches to measuring quality. Some of them are:

(*i*) *Complaints:* The level of complaints from users is one indicators of quality and shows some directions for potential improvements. The absence of dissatisfaction is not necessarily proof of user satisfaction.

(*ii*) *User Surveys:* Surveys on users for their assessment of the services offered are useful in measuring the quality. The surveys can be made with the help of questionnaire, interview and observation.

(*iii*) *Bench Marking:* Comparing the organisation and services of one library with its competitors having similar characteristics and features.

(*iv*) *Employee Surveys and Suggestion Boxes:* Surveys on employees can provide valuable information on the interface between teams and departments. Suggestion boxes are provided to users for their suggestions so that the improvement of the

performance of the library system can be made. Users are given freedom to indicate their suggestions for the improvement of the library.

(*v*) *Establishing Quality as a Strategic Issue:* Quality as strategic issue implies acceptance of the importance of user's requirements.

(*vi*) *Organisational Structure:* Two types of organisational structures exist. One is mechanistic and the other is organic. The mechanistic structure includes functional and bureaucratic aspects which tend to be relatively inflexible with clearly defined levels of authority and decision-making policies, procedures and rules. Organic structure on the other hand employs decentralised decision-making whereby both accountability and responsibility are transferred to as low a level in the organisation as effectively possible.

(*vii*) *Organizational Culture:* The term culture represents the corporate identity or personality. The culture creates a common understanding amongst organisational members concerning the organisation's mission and the behaviour of its members. The culture of a library or information system depends on the culture of its parent body. The culture of a public library is public oriented. The culture of an academic library is related to education and learning.

(*viii*) *Human Resource Management:* The success of any management depends upon employee commitment. The employee commitment depends on the behaviour of their leader towards subordinates. It also depends on elimination of fear, social involvement with others, the challenge, responsibility on job, participation in decision-making, team building, etc. The traditional libraries invested more on books, furniture, hardware and building than human resources. But Investment in human resource ensures successful implementation of TQM.

5. CONCLUSION

The implementation of TQM in a library will definitely improve the quality for total satisfaction of users. TQM can help the libraries to change their role as custodians of books to active agents of information transfer. It also helps in achieving excellence in the provision and

promotion of information services. TQM can pave way for organising and involving the whole organisation towards achieving quality and customer satisfaction. TQM is essential to foster work culture among the employees for their involvement in the services of the library to provide quality service and customer satisfaction. It calls for a strong leadership at all levels. TQM focuses on continuous improvement in products and services, with greater employee involvement and an increased emphasis on customer needs.

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Total Quality Management in Librarianship

R.H. WALMIKI

ABSTRACT

The paper sifts through various definitions of 'quality'. It traces genesis, meaning and basic elements of Total Quality Management (TQM). Finally the paper seeks to relate the need for TQM in library and information centres and suggests viable means of its implementation.

1. INTRODUCTION

The main concern of the modern librarianship is not only selection, collection and organisation of appropriate information but also to provide quality service, whereby the needs of the user and that of the community are satisfied in the most efficient and cost effective way. This, however, requires maximising the potential of all employees in a continuing drive for improvement.

2. CONCEPT OF QUALITY

2.1 Definition

A large number of definitions are available in the management literature in relation to 'quality'. These can be grouped into two categories (*i*) provider or supplier oriented definition and (*ii*) user or customer oriented definition. The former emphasises on product specifications or on resources available with the service organisation, whereas the latter emphasises on the value for the customer in terms of the

services from the product or services from an individual. The concept of quality has changed nowadays from provider oriented to customer oriented. It has now been well established that quality is not what producers define but it is what the customers require.

The British Standard 4778, 1987 offers the definition of quality as "The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs". Feigenbaum, a key writer on quality management, defines it as —"Quality is the total composite product and service characteristics of marketing, engineering, manufacture, and maintenance through which the product and service in use will meet the expectation of the customer".

The Ford Motor company defines it as "Quality is defined by the customers. The customers wants products and services that throughout their life meet his or her needs and expectations at a cost that represents value". According to Tann, "Quality is fitness for purpose".

It does not matter whether context for the definition of quality is an industrial company involved in heavy engineering, a government department preparing legislation, or a library providing services—all have to meet customer/consumer/beneficiary/user needs. There was a time when the quality of libraries or library services were defined in terms of stock size, available resources and the mere number of services provided by them. These norms no more form the basis of users' delight now. Nevertheless, these are the essential criteria for providing quality services.

2.2 Quality and User Needs

Quality is achieved when customer needs are met. It is the user's requirement that a higher quality library service should conform to; it is the service that meets the user's purpose. But user's need is not a universal and static phenomenon. It keeps on changing from user to user and also, even for one particular user it changes with time.

Changing user needs lead to the change in the library strategy towards achieving the goal of user satisfaction. Hence, quality is a journey, not the destination; and it can be built upon only through the continuous improvement processes. Meeting changing requirements of the users with time requires the libraries to continuously update in terms of their resources, services, and facilities.

3. TOTAL QUALITY MANAGEMENT

3.1 Genesis

The use of standards in quality management can be traced back to periods long before the terms were coined. One of the earliest examples is to be found in the building of the Pyramids of ancient Egypt, where the developments of the cubit provided a means of ensuring that materials met the precise requirements of the builders. Quality assurance principles are also to be found in the operation of the medieval crafts guilds. The guilds regulated the standards of workmanship of its members, enabling customers to have confidence in goods purchased, source such goods which bear a standard quality and attractive price.

During the industrial revolution and the periods following it, the management of quality shifted its emphasis to inspection and control. The need for standardisation and the importance of being able to rely on the quality of input, of product and of finished goods was crucial to military production during the Second World War. In Britain and the USA standards of supplies, production, and product were set by the military. This practice continued in the years following the war. The importance of quality of products for the emerging space technology programme was realised by NASA. By the 1970s, the British Standards Institution published its first charter of standards relating to quality management, 'BS 4891: A Guide to Quality Assurance'. By the 1980s the International Standards Organisation was seeking to produce a common standard for quality assurance, working with individual countries and the European committee for standardisation. Now, the standards are adopted all over the world. Quality management is not a static field; but it is dynamic process, continuing to evolve in response to on going changes.

3.2 Meaning of TQM

Total Quality Management (TQM) is defined as managing the entire organisation so that it excels in all dimensions of products and services. The objective of the TQM is to meet and exceed customer expectations by providing a product or service with built-in quality.

TQM stands for:

Total — Everyone has a role to play

Quality — Doing right thing first time, every time, all the time

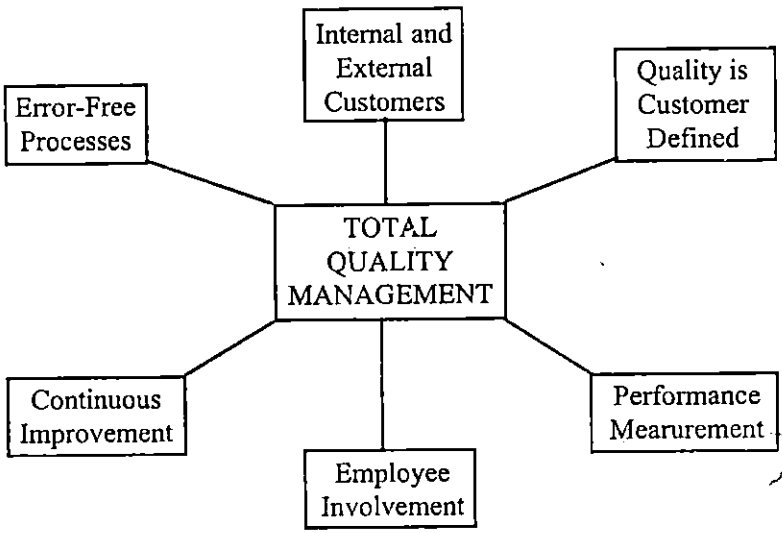
Management — Art of making it happen

TQM is a customer-need driven management process. It believes in delighting customers first time, every time and thereafter. All the functions of an organisation and each employee in every function are involved to attain excellence in their respective areas of activity.

The main concern of the TQM is to (*i*) react to change (*ii*) ability to innovate and (*iii*) commitment to continuous improvement of quality. TQM demands that we know what is right, that we do the things rightly every time and that we continuously look out for ways to improve every process in the organisation.

3.3 Elements of TQM

The main elements of TQM are depicted in the figure given below:



3.3.1 Quality is Customer Defined

Quality is defined in terms of customer's perception (*i.e.*, customer's judgement about an entity's overall excellence or superiority). TQM aims to manage and fill the gaps between expectations and perceptions on the part of management, employees and customers. The most

vital gap is the one between customer's expectation of service and their perception of the service actually delivered. Such customer focus requires not only an attention on internal processes, but also an awareness of the external marketplace. Only a match between the requirements of the marketplace and internal processes and operations will lead to a quality service.

3.3.2 Internal and External Customers/Users

Employees of an organisation are considered as internal customers. External customers/users are those who are in need of service. TQM intends to encourage the internal customers to identify the needs of the external customers and provide the service accordingly.

3.3.3 Employee Involvement

Employee involvement means that each internal customer must take the initiative and not rely upon someone else. For this, the organisation needs a work culture which motivates this behaviour. Everyone must understand that they contribute equally to quality and can only succeed through co-operation and support.

3.3.4 Error-free Processes

The focus of TQM is on preventive steps to eliminate waste, reduce costs and achieve error-free processes.

3.3.5 Performance Measurement

TQM gets customer feed-back on service obtained by the user and modifies the service based on the feed-back so received and thereby improve the quality.

3.3.6 Continuous Improvement

Continuous improvement must be seen as the responsibility of everyone in the organisation. To develop this focus TQM places emphasis on training, education, communication, recognition of achievement and team work.

4. IMPLEMENTING TQM IN LIBRARY SERVICES

As TQM has become increasingly important, the philosophy has shifted from a purely statistical view of process control towards a systematic

view with strong internal and external customer orientation. Interest in service quality has increased substantially in recent years. Library and information service managers have since long recognised the need for customer oreinted service and the approach inherent in the TQM philosophy. Some have sought to implement TQM and some have been involved due to TQM initiatives taken within organisations. In addition, customer care and other customer focused programmes have been ushered in the training of those library staff who are in direct contact with the public.

Implementation of TQM in library services requires change in the mental frame of the employees. Each employee has to contribute his/her best for achieving the objectives of the librarianship. Each one has to work to meet and exceed the user's requirements for information. Library staff is expected to delight the information seekers by providing specific information in the least possible time in the form most appropriate to the user's requirement. Each employee has to be familiarised with the tenets of TQM and problem solving techniques.

5. CONCLUSION

TQM is a management concept to achieve excellence. It does not demand different things but, simply demands doing things differently. There is an unprecedented technological improvement and user's expectations have increased. In this context, there is a need on the part of librarianship to be prepared to face the challenges. Hence, there must be focus on continuous improvement in products and services, greater employee involvement and increased emphasis on customer satisfaction.

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Total Quality Management in Libraries and Information Centres: Some Basic Issues and Implications

PRASHANTA KUMAR BEHERA AND
BIBHUTI BHUSAN SAHOO

ABSTRACT

The application of a quality assurance system in libraries is seen as a close-loop control system, which deploys policy and strategy and obtains feedback from various levels in order to improve the performance of the Library and Information Service(LIS) activities. The paper reflects on the benefits from quality system and explains the various steps of Total Quality Management(TQM). It highlights the introduction of TQM in libraries, necessary prerequisites and methods to be adopted in LIS activities. Suggestions on the future development of total library quality management (TLQM) and also the areas of application in libraries have been made.

1. INTRODUCTION

The primary objective for the implementation of TQM standards is to improve product quality. In this changing scenario, library and information centres have to adopt new paradigm. Every library tends to be called as quality organisation, but how to prove it?. Recognising the importance of the quality, we have to go a long way to achieve the same by providing the best possible services to the users and adopting and developing the principles of quality assurance and TQM in libraries. The term 'Quality' was taken as an entity related to the resources, range and richness of the library stock. However, in the context of libraries, the viewpoint has now been changed from 'resourcefulness' to satisfaction of the reader demands. The LIS

professionals' challenge in the context will be to sensitise his/her staff to the importance of proper indexing and its relation to customer satisfaction (motivating), taking initiative to arrange resources, if needed (leading), and providing the necessary skills (developing) for doing their jobs effectively.

2. WHAT IS TQM?

Quality means "to meet or exceed the need and expectations of the customer in the most cost-effective way". It has four basic elements, which are (*a*) customer expectation (*b*) competitor (*c*) cost and (*d*) technology. Quality now has a new equation: "Quality = Customer Requirement + Fitness for Use". It is therefore essential that quality be grounded on customer satisfaction and product review. Products and services as outputs must carry the following facets: (*i*) High quality (*ii*) Low cost and (*iii*) Timeliness (fast delivery). Likewise, there are customer levels of expectations on these outputs, which may be categorised as follows: 1. Explicit (Verbally communicated by customer) 2. Implicit (assumed by customer) 3. Customer delight (Beyond customer expectations)

A good quality system makes sure that everyone is responsible and quality is apart of every activity. It also ensures consistency of products and services and guarantees the utilisation of same materials, same equipments and same methods and procedures every time in the same way. TQM is a way of managing to improve the effectiveness, efficiency, flexibility and competitiveness of a business as a whole and it involves whole organisation getting organised and committed to quality in each department, each activity and each person at a each level. For the success of TQM, effective training, effective implementation and executive involvement are essential. Quality system, especially in case of service organisation like libraries, has three key aspects *viz.*, management responsibility, personal and material resources and quality systems structure. Therefore, guiding principles of quality systems are:

(*a*) Meeting the requirement of the customers both internal and external, on time and with full satisfaction.

(*b*) The involvement and commitment of every individual to achieve quality.

(*c*) Quality is built in to the process and it comes through prevention rather than cure.
(*d*) Quality is measurable and it can be measured by non-conformances.
(*e*) To become customer driven rather than self focused.
(*f*) To concentrate on process rather than be preoccupied with results
(*g*) Use workers heads in addition to their hands
(*h*) Alignment (external and internal)
(*i*) Total involvement, continuous improvement and leadership commitment.
(*j*) TQM is a human relations oriented philosophy that requires fundamental changes in personnel management, treating them as ever-appreciating asset.

3. HOW LIBRARIES HAVE IMPROVED WITH TQM

Many libraries have implemented TQM successfully. Some ways a library might use the principles of TQM to enhance library services are:

(*a*) *Manage by fact:* Make library decisions after careful analysis of data gathered with tools such as check sheets, histograms, and Pareto charts.
(*b*) *Eliminate rework:* Library work is often labour intensive—simplify it and make sure it is done properly the first time.
(*c*) *Respect people and ideas:* Staff are the library's most valuable resources, and they should be encouraged to point out problems without fear of management.
(*d*) *Empower people:* Trust library staff to act responsibly and give them the appropriate authority to make decisions that can improve the quality of work they do.
(*e*) Create service brochures, information kits and conduct a user survey about library services.
(*f*) Improve signage and change hours of operation.
(*g*) Provide a more convenient material return and simplify check-out of materials.
(*h*) Use flexibility in staff assignments and cooperate with local government.
(*i*) Ask vendors to give product demonstrations.

(*j*) Give new staff a thorough orientation and create interdepartmental library advisory groups.
(*k*) Improve the physical layout of the library, track complaints and develop an active out reach programme.
(*l*) Open satellite offices and publicise new or changed services.
(*m*) Develop user and staff training materials and target services to specific groups.
(*n*) Offer electronic document delivery and follow the mission statement.

4. AREAS OF APPLICATION

Total Quality Management in Libraries must be built-in on the librarian's internal and external functions. Hence, this must reflect in his commitment to quality as resource manager. All library managers run library programs to service the needs of their clients. Essential components of good library programmes include: 1. Programme Content and Standards 2. Competent/Efficient Library Staff 3. Adequate Financial Support. 4. Suitable Working Quarters. 5. Dynamic Leadership. Quality of services also needs to be managed. User services need to be proactive; facilities must accommodate all media formats. Technologies must not disrupt the delivery of basic user services.

4.1 Users Need

User requirements drive the quality process and understanding the user involves acquiring all the relevant information in terms of attitudes, values, requirement, desire, etc. Each library must assess its clientele, their needs, services to satisfy these needs and the framework or context for information services. LIS, the acquisition staff, for instance, should treat the circulation staff their internal costumer. Requests put to the circulation /reference desk for document not held by the library can serve as a useful input for the acquisition staff to further enriching experience, and it is sure to motivate the behind the screen staff to provide the best to their colleagues, and in turn, to the system.

4.2 Information Technology

Like TQM principles, the library automation system concerns all library functions, OPAC, circulation, acquisitions and serials. Also, a

CD-ROM network permits online access to bibliographic databases throughout the campus as well as through dial-up access. The home page developed by the library staff is an effective gateway for accessing information on the daily library life by providing access points to various services. In libraries, we specifically believe, the incidence of failed products is most effectively reduced by improvements in technical services The need for collaboration of librarians and information technologists arises from convergence of their missions, user demands for coordinated services and competition for resources. Moreover, the pace of technology requires rapid yet flexible responses, not protracted haggling over territories, roles and responsibilities. In contrast, client/server technologies and distributed computing regimes offer to users new freedom and flexibility, but at the same time push complex technical issues and knowledge requirements outward to the desktops of librarians and end-users, where the skills to cope with these are often inchoate and inconsistent. Finally, we suggested that financing increased information services for purposes of quality control, out of technical service budgets raises the likelihood of library failures by reducing the amount of value-added work provided by technical services departments and by limiting opportunities for improving the performance of a library's interdependent sub-processes.

4.3 Standardisation Services

TQM gives the following result in the various library activities, which are:

(*a*) Improving quality of information analysis and consolidation of product.
(*b*) Better product design and improvement of confidence among users.
(*c*) Developing an inventory of all the available documents.
(*d*) Developing a database, which includes readers for all type of materials, held in library.
(*e*) Improving skills of end users to profitability interact with information system and services.
(*f*) Integrating and networking all library resources into serviceable resources to users.
(*g*) Reduction in user complaints and efficient utilisation of men, machine and materials resulting into higher productivity.

4.4 Documents Control

Clearly, the library must ensure that all the documents are available at the points where they are required to be. The system should also provide comprehensive instructions on documents formulation and review. All the documents that define the product or are required for the effective operation of the quality system need to be placed within the control system. All the documents should be legible, clear, latest editions, readily identifiable and carry authorisation status. Method should be established to control the issue, distribution and revision of documents. A common procedure with documentation number is to be established and maintained to ensure that document and data control is carried out in order controlled condition. For effective document control, areas of responsibility must be clearly defined and precise procedures for distribution, storage and retrieval must be drawn up. The first essential requirement for documents control is identification and list of records, which are: (*i*) updating of an already existing collection, (*ii*) every document must be given a unique identity (accession numbers) and should be carefully analysed, classified and shelved, (*iii*) materials must be recorded in a master list, and (*iv*) catalogue card and cardex for regular subscribes periodicals are required.

4.5 Collection Development

Collection development is one of the critical elements of library to the quality, cost, efficiency and safety of the services supplied by the organisation. Following are the necessary procedures for the successful implementation of TQM in libraries: (*i*) Updating of an already existing collection. (*ii*) Identify customers, both internal and external. (*iii*) Measure customer satisfaction and compare it with competitors. (*iv*) Institute continuous improvement in processes. (*v*) Ensure that all materials and services obtained from various sources will fully meet the user requirements. (*vi*) Developoment of IT services. (*vii*) It involves document selection, acquisition of these materials and making these available to the users.

5. IMPLEMENTATION OF TQM IN LIS ACTIVITIES

TQM requires a radical transformation in organisational culture. This transformation must be able to support paradigm shifts and behavioural

changes. Cultural change is difficult and even painful for organisations. Factors that impact on cultural change include: (*i*) Size of Organisation. (*ii*) Age of Organisation. (*iii*) Past successes. (*iv*) Work pressures from market industry. Following are main tool for successful of TQM in libraries.

(*a*) Create and develop a procedure, which will help library staff to perform their task according to quality standard.
(*b*) Meet information queries effectively, efficiently and promptly.
(*c*) Establish quality goals and subject them to continuous review
(*d*) Devise mechanisms to ensure balanced growth of library collection by appropriate budget allocation among various competing subject area, which is one of the essential pre-requisite for healthy collection development.
(*e*) Always uses latest editions of classification schemes, cataloguing codes, subject heading list and thesaurus for processing work.
(*f*) Provide specialised information service consistently and regularly like (GAS, SDI, Indexing and Abstracting) to keep the users knowledge up-to-date
(*g*) Release and make documents available in areas where the information is needed. Every one involved in the work should by wholly aware of his/her individual responsibility for quality.
(*h*) Change the library management practice and attitudes in every functional area enhancing the seriousness of purpose to satisfy the user.
(*i*) Computerisation of all house-keeping operation and information services is useful to achieve TQM
(*j*) Increase opportunities for user interaction and feedback
(*k*) Develop good public relation and open communication.

6. BENEFITS OF TQM

Libraries can benefit from TQM in three ways: breaking down inter-departmental barriers; redefining the beneficiaries of library services as internal customers (staff) and external customers (patrons); and reaching a state of continuous improvement. These are the main benefits of TQM in libraries and Information centres.

(*a*) Reduction of user complaint to gain a competitive advantage cover other information providers.

(*b*) It reduces bureaucracy, empowers staff and creates a team base culture in the library.

(*c*) It helps in gauging users needs and expectations in a proactive way and equips the librarians to provide more and better services.

(*d*) It is an evolutionary process and can easily be incorporated into the already existing management system of libraries.

(*e*) In TQM quality is high profile management tool. Its implementations in libraries improve the image of the library staff and helps in public relation and marketing.

(*f*) It helps in breaking down inter-sectional barriers/status in a library and promotes cooperation and teamwork instead of competition.

(*g*) Empowered staff members develop a sense of self-determination.

7. BARRIERS TO TQM

Following are some barriers to TQM: (*i*) Senior professionals of the library are afraid of turning over their services and practices to the uninformed whims of users. (*ii*) Soft role model of Indian work culture. (*iii*) TQM vocabulary or barrier of language, *e.g.* customer, quality control. Total quality and management. (*iv*) Top management is not willing to share information and power with subordinates. (*v*) We are accustomed to solve problems quickly and do not want to be impatient with long process.

8. POTENTIAL CHALLENGES

While TQM has clearly positive aspects, implementing it can have potential challenges and also face three barriers to the adoption of TQM in libraries:

(*a*) *Vocabulary:* objections to terms such as "total," "quality," and "management" which imply that high standards are not already being met;

(*b*) *Process:* our disposition tends to be impatient and we try to solve problems quickly, contrary to TQM's careful process analysis; and

(*c*) *Professionalisation:* professional staff can be resistant to turning over their practices and services to what they perceive as the "uninformed whims of the customer". Also notes that it is not possible to satisfy everyone's demands; choices will need to be made.

In the changing scenario LIS professionals have to adapt to the new paradigm. Library and information professionals will have to take up challenge of looking outwards to increase their client base and open up their resources, facilities and services to meet the information needs of the clientele in those areas, of course, without, in any way jeopardising the interest of the internal clientele. For this reaching-out measure to be a success, LIS professionals will have to fine-tune their resource development and utilisation policies. After a period of growing awareness of the relevance of quality management method in LIS sector contexts, an increased number of libraries have actually started to practice TQM. Library and information scientist will be successful in their mission if they accept the challenges posed by:

(*a*) Increasing and complex information needs of their clientele
(*b*) Information explosion
(*c*) Increasing rate of obsolesence
(*d*) Interdisciplinary nature of information scatter
(*e*) Continued resources constraints, wide variation in quality and reliability of information.

9. SUGGESTIONS

Libraries are ideal places to implement TQM. They are service organisations dedicated to their customers, the patrons. By formulating a strategic plan, and following it with a commitment to continuous quality improvement, library managers can transform and improve their organisations. Following are the main point to develop the TQM in libraries:

(*a*) All, LIS professionals should have requisite knowledge and skill in all the services and house-keeping operations.
(*b*) Maintaining consistency of the procedures they are deployed and implemented, results from a combination of excellence of the document system and the skills and training of the personnel.

(*c*) Personnel performing specific assigned tasks should be qualified on the basis of appropriate education training and experience as required.

(*d*) To achieve this, the library personnel should be sent to attend various refresher courses, computer application, workshops and seminars, etc.

10. CONCLUSION

TQM can provide necessary impetus to organisations for positive change, stimulating the workforce and creating an environment that gives a company the competitive edge. Total quality is a dynamic state associated with products like (catalogue, current content, accession list and bibliographies) provision of services, process, and peoples and place (environment) that meet and exceed user expectations. Contemporary library authorities must create and sustain an environment, which fosters organisational development. They must also foster an environment which enhances individual and group effectiveness. For corporate library and information centres at least, the adoption of the TQM process makes for more effective working with services and output, which are truly relevant to their users. As a result, the libraries now are in a position to expand and improve upon principles they already value and employ while introducing new approaches to planning, problem solving, envisioning future customer services and needs.

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Total Quality Management in Libraries – The Reality

N. VARATHA RAJAN AND B. RAVI

ABSTRACT

There is a tremendous change taking place in the field of LIS in the present context. The provision of high quality services has always been the responsibility of library managers. The latest technological advances coupled with the expectations from the funding agencies and users, necessitate managerial skills that match the situational demands. It is in this regard that the application of TQM could assist library and information managers. This article discusses the concept and importance of TQM in libraries.

1. INTRODUCTION

In the 21st Century quality has become a necessity to all aspects and areas in human life. It applies to all types of work processes, employers, institutions and all sectors including the educational sector, especially in terms of quality in educational services. Library is a part of the educational system, it is necessary to provide quality services to users of the library. Due to information explosion, the expectations from the library are changing rapidly. In a rapidly changing environment, greater competition for resources, the ever-increasing costs of information carriers, the rising expectation of funding agencies and clients and the increasing complexity of information; users expect quality services, in provision of infrastructure, as well as training. It is evident that effective management skills must match these intense demands on library and information centers. It is in this regard that

application of Total Quality Management (TQM) could assist library and information managers very well.

2. WHAT IS TQM?

Quality management depends upon total quality philosophy of an organisation. Its every activity hinges on product/service quality and thus everyone, and all departments/disciplines, are involved in the chain of efforts towards its goal of customer satisfaction. The totality of the efforts of an organisation in making its products/services satisfy the needs of the management to initiate steps to inculcate quality culture, with customer orientation, in each and every function and each and every person in the organisation. TQM is defined as a 'management approach of an organisation, centered on quality based on the participation of all its members and aiming at long-term success through customer satisfaction, and benefits to all members of the organisation and to society'. The TQM philosophy provides a comprehensive way to improve quality by examining the way the work gets done in a systematic, integrated, consistent and organisation wide perspective. Thus, it is a management tool for converging quality efforts and installing a structured approach to quality improvement in the organisation.

The two people associated with the birth of the TQM movement are W. Edwards Deming and J.M. Juan. Some forty years ago Deming, father of the quality revolution, assisted the Japanese to become the world manufacturing leaders they are today. Many service industries, including libraries have adopted the Deming 14 points. TQM has been defined as "the application of quantitative methods and human resources to improve the material and services supplied to an organisation, all the processes within an organisation, and the degree to which the needs of the customer are met, now and in the future."

A successful total quality programme must be based on certain basic principles. They are:

- Top management commitment
- Attitude change
- Continuous improvement
- Strengthened supervision

- Extensive training
- Recognition of performance

TQM aims at an effective system for integrating quality of design, quality of manufacture, and quality of service, which will result in products/services which are economical and satisfy the customers. The management provides the motivation for good quality work and, further, all the means to achieve it, through good systems and procedures, materials, machines, equipment, methods, tools, training and an environment where such work is recognised and rewarded in all the areas of operation. Thus TQM ia a vehicle for quality maintenance and continuous improvement with customer focus throughout the organisation.

3. FEATURES OF TQM

- TQM is an integrated approach of an organisation towards customer satisfaction
- TQM organisation can easily get quality certification
- It is a management commitment on organisation-wide basis
- It is a management philosophy to guide the top management of the library
- It meets all the requirements of information gathering and dissemination operation
- It is an application of qualitative methods and human resources to improve the materials and services supplied by an organisation
- It is a reliable system of information supply for decision-making (management information system)
- It strongly focuses on users and reduces total cost of meeting user requirements
- It emphasises proper training for staff and direct involvement throughout the process
- It calls for strategic planning based on vision, mission, goals and objectives of libraries

4. TQM AND LIBRARIES

In recent years, both the library profession and the large educational community have focussed on a model of management commonly referred to as service quality. Service quality means being able to view

services from customers' point of view, and then meeting the customer expectations for service. With the greater competition for resources, rising expectations of users, increasing complexity of information provision from a variety of new providers, ever increasing cost of information carriers have enhanced the operational transparency and accountability of libraries. The modern libraries are managed according to principles which are common to the management of any other business or organisation. The rapid development and ubiquity of information technology, tremendous speed of socio-technical development, changed needs of users have all added to the expectations from a service organisation. It is evident that management skills must match these demands on and threats to library and information services. The application of TQM in libraries is to establish a culture of never ending improvement of quality of products and services. Its implementation in libraries improves the image of the library staff and helps in public relations and marketing.

The service oriented organisations like libraries are natural choice for the application of TQM. Most libraries are pursuing excellence in their services as well as products. TQM could be the catalyst that motivates librarians to examine issues such as librarianship, staff empowerment, incentive programs, work simplification, innovation and performance evaluation. The importance of TQM for libraries is not only centred around the user's needs but also in anticipating and exceeding the demands of the fast changing environment of service delivery in libraries. Most libraries today operate according to a strategic plan containing vision and mission statements, goals and objectives and short, medium and long-term plans. To make this all effective, TQM requires that the management of the library commit itself to the process and actually set the example in displaying a commitment to continuous quality improvement. The quest for quality must be given meaning through actions. Implementing TQM as part of the future plans of a library consists not only in changing certain procedures, but a total rethink of all its operations, where the culture is quality-driven, customer-oriented and marked by teamwork and quality service to the users.

4.1 Five Major Quality Factors in Libraries

- Reliability: the ability to provide the service in a dependable and consistent manner with minimal variation

- Responsiveness: the timeliness of the employees in providing services to the users of the library
- Assurance: the staff is friendly, polite, considerate and knowledgeable.
- Empathy: staff demonstrate an understanding of user needs and provide individualised attention to the users
- Tangibles: proper maintenance of the physical appliance of library facilities like equipment, personal and published materials.

4.2 Advantages of TQM in Libraries

- It ensures qualitative library and information services
- It reduces bureaucracy
- It helps in gauging the user expectations efficiently and effectively
- It promotes cooperation and team work in library staff
- It helps continuous education to library staff
- It is a management of organisation wide involvement

4.3 Limitations to induction of TQM

- Lack of management commitment
- Improper planning
- Lack of continuos education and training
- Incomplete organisational structure
- Inadequate empowerment and teamwork

5. CONCLUSION

In any service industry, users are of central importance and if their demands are not met, there is a chance of failure in reaching the objectives of that industry. In the present circumstances and problems of libraries like change and uncertainty, growing demands, the influence of information technology and reconstruction and development, it is essential that this process be arranged on a rational and principled basis. The application of the philosophy of TQM offers a formal and systematic approach to these problems and could result in a process where continuous improvement of services is the final result.

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Total Quality Management in Library and Information Services

J.C. SHARMA

ABSTRACT

This article demonstrates how to take effective steps towards the larger goal of total readers satisfaction. It defines the meaning of quality control and its evolution, and depicts the relation between quality and user's. It describes and the implementation of TQM in library and information services. It also examines the benefits of quality management such as efficiency, continual and systematic improvement in the activities of the library as a whole. Finally, it elaborates on the modern concept of TQM.

1. INTRODUCTION

The term quality is often used loosely and it conveys different meanings to different people. When referred to a product/service, it generally signifies the degree of its excellence. However, when examined closely, this meaning of quality is found to be misleading. For instance, a Mercedes may be an excellent car in Europe or America, but it obviously is a poor vehicle for use in the jungle tracks of Africa or on the rough roads of India. Similarly a good walking shoe makes unsuitable footwear for sports. Thus there can be no absolute quality rating for a product/service, without relation to its intended use. The quality of a product/service can therefore be defined as "*Fitness for the Purpose*". The more fully it serves its intended purpose, the higher is its quality.

New Webster's dictionary defines the term quality as "that which makes or helps to make anything such as it is; a distinguishing

property, characteristic, or attribute; the level of excellence of something; as a product/service of high quality". This definition is fine if we all perceive quality in the same way; however when two or more readers discuss the quality of a product or service, varying degrees of quality will be established, depending upon each person's point of view and prejudices. Meaning thereby that if two different people look at or use the same service, they will inevitably have different views on its quality. We, therefore, can expand our definition of quality in the context of library services simply as "*conformance to reader's requirement*". We, therefore, can define quality as conformance with reader's requirements and expectations. In library services, there is always a high price to pay for quality but the rewards are limitless if attained well in time.

Each and every organisation, whether it is a manufacturing unit or service organisations like banks, insurances, libraries and information centers, exists to provide services or products acceptable to customers or users to their fullest satisfaction. The success and failure of an organisation are gauged from the extent of customers/readers delight which they receive from the services of the organisation/library or service of a unit or an individual.

The readers may be internal as well as external. For instance, the teaching faculty and the students are the external readers of a university library. On the other hand, the people or groups within the library who are dependent on the work or input from other areas within the library are the internal readers. In every case, whether it is manufacturing or a service organisation and whether it is the internal or external customer/reader, a customer/reader always expects value for his money or the time spent in getting the desired service.

2. CONCEPT OF QUALITY

The concept of quality has changed nowadays from provider oriented to customer oriented and it has now been well established that quality is not what producers define but it is what the customers/readers require. There was a time when the quality of libraries or library services were defined in terms of stock size and available resources provided by them. These norms no more form the basis of user's delight now. No doubt, these form an essential criteria for providing quality services, but it is the service itself which the users look for.

3. QUALITY CONTROL

The term 'control' in the context of management is a function whereby performance is measured against the planned objectives, and in case of deficiency, necessary remedial measures are taken to ensure the achievement of the stipulated objectives.

When applied to the quality of a product, the term *quality control* denotes all those activities which are directed to maintaining and improving the end result.

It involves (*i*) setting of quality targets (*ii*) appraisal of conformance (*iii*) taking corrective action where any deviation is noticed, and (*iv*) Planning for improvement in quality.

4. EVOLUTION OF QUALITY CONTROL

The terminology of quality control is not new one. It can be traced back to the stone age man who ensured that the point of his stone tool was sharp enough for his purpose. In present day terminology, he is assessing the quality of the tool which he had manufactured, by comparing it with another good tool. But the situation has changed now. Stone age man was the manufacturer as well as the user himself. But today's quality engineer produces the items required by every citizen upto their satisfaction.

5. QUALITY AND USER'S NEEDS

The term quality is linked to customer or user's needs. It is user's requirements that a higher quality library service conforms to; it is a service that meets the user's purpose. But, user's need is not a universal and static phenomena. It keeps changing from user to user and also, for one user it changes with time. Every user defines quality in his own way. A library campped with macro-documents, such as books may provide excellent services to a searcher of macro-documents, but may miserably fail to satisfy the need of a user looking micro-documents. So, whereas for the former user, a library is an excellent one, it is not so for the later. An academic library, for instance, may serve excellently to the faculty members and the students, but it may not be able to satisfy the needs of the general public. Here again, for the first group of users library services are excellent whereas for the second group of users these are not so.

Therefore, we can say that user's changing needs lead to the change in strategies towards achieving the goals of user satisfaction. That is why it is said that the quality is a journey and not the destination; and it can be built upon only through the continuous improvement processes. The efforts to meet changing requirements of the users with time require updating of libraries continuously in terms of its resources, equipments and facilities.

For a Library, it is never possible to satisfy all the users of the library. Therefore, it is essential to segment the users on the basis of their literature/information needs and to decide upon the groups of users to whom the library wants to provide quality services, though to satisfy everyone is ideal enough.

6. IMPLEMENTATION OF TQM IN LIBRARY SERVICES

The implementation of TQM in library services requires change in the mental frame of the employees as well as the executives of the library; customer segmentation in terms of their needs; service strategy to each user segment within library constraints; and the last but not least, support from the top management of the library. Therefore, first of all implementation of TQM requires a changed attitude of employees towards their work. Each employee has to contribute his or her best for achieving the objectives of the department which in turn, are driven by the objectives of the library. Everyone has to work to meet and exceed the user's requirements for literature and information. So we can conclude that each employee of the library has to be familiarized with the concepts of TQM and problem solving techniques and has to be provided opportunities to actively participate in activities like quality circles, suggestions and schemes etc.

7. BENEFITS OF QUALITY MANAGEMENT

Many libraries are turning to quality systems as an important cost-effective means of competing in their professional circle. Readers are seeing the benefits of systems that will provide them with evidence that their projects will be executed efficiently. More libraries will be placing quality requirements in their tender documentation. Therefore, providers of services must respond to the 'quality'

requirements of their customers/readers. This included not only showing objective evidence that the service provided to their clients or readers meets specified and agreed requirements, but also reducing reworking time and ensuring that the exposure of construction operations to liabilities or high rectification costs are minimised.

There are many benefits for libraries that implement and maintain an efficient and effective quality system, which includes:

(*i*) Enhanced efficiency of the library through streamlining of its operations. A properly run system saves money, time and labour etc. It is cheaper to do right work at the first instance.

(*ii*) A means for continual and systematic improvement in the work activities of the whole library. A well-developed quality system will enable librarian to identify areas that need to be addressed and encourage staff to monitor and improve their own section's performance building readers' confidence, as their requirements are met resulting in repeat orders or new readers.

(*iii*) Higher staff morale provides recognition and enhances the image of the library.

8. TOTAL QUALITY MANAGEMENT: THE MODERN CONCEPT

So many terms on quality control such as, "Total Quality Control", "Quality Assurance" and the "Quality Management" have been coined in quality control literature. The quality of service in a library is determined by the philosophy, commitment and the enhancement policy of the top library personnel function, involving leadership of the librarian and coordination of all quality related activities throughout the library. "Total Quality Management" is a better term to describe this new concept on quality control.

Total quality management deals with the product/service in its totality. It has been recognised that quality is determined by the combined efforts of various sections of the library such as reference section, circulation section, acquisition section etc. These sections are primarily responsible for the quality of service in the field of library and information science. The quality cycle begins and ends with the user. It starts when the user's need is analysed to design a service for its fulfilment.

The modern concept of quality control is to set quality standards, produce the merchandise or service and to scrap or rework any failings to meet predetermined and agreed standards. Total quality management may be defined as "Continually satisfying customer requirements, at the lowest price". TQM promotes a process of continuous improvements and innovation, where control is embedded within and is driven by the culture of the library as a whole.

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Total Quality Management Technique for Library and Information Systems and Services

K.R. PATEL

ABSTRACT

The advent of information technology has brought in its wake an increased quality consciousness. The paper discusses how the libraries and information centres should gear up to meet the new application challenges and growing qualitative standards. It tries to focus on the areas where IT can be applied to modernise the information science for achieving twin objectives of efficient work culture and conformity to quality requirements.

1. INTRODUCTION

The history of last forty years has witnessed us a considerable three dimensional change in library and information centers.

1.1 Change in Information and Communication Technology (IT & CT)

Rapid research and development in last five decades has made available many IT and CT equipments like computers printers CD-ROM, e-mail, fax, videotext, videoconferencing, scanner, DVD Rom, digital cameras, PDAs which have revolutionised information gathering, strorage, processing and dissemination. When the libraries fully adopt these technological changes these will be known as a virtual libraries.

1.2 Change in the form of Subject and its Knowledge

The traditional approach to subjects is changing because of the pace of information generation and dissemination. The changing concepts

born of new researches and methodologies have their impact on the knowledge available hitherto. This fast pace has it turn generated demand for more, qualitative and uptodate information in several subject areas.

1.3 Change in Need of Users

The library reader is now a user who has changed his needs from book/document to precise information. He wants it on his personal computer instead of visiting library. The users are only interested in a very small but specific area of knowledge of their interest, research and other activity. The change in user's needs has led to the change in library atmosphere.

The situation is forcing the profession and libraries to modify the system of their selection, collection development, processing and dissemination of information.

2. PRESENT SCENARIO AT LIBRARY AND INFORMATION CENTRE

Changes are required to be implemented in the library and information centre. To cope with the requirement of the present times the libraries have to employ large scale changes in the library system.

The libraries and information centres in western and developed countries have very heavy reliance on IT and CT equipments. They provide many services like CAS, SDI, consolidation of information, repackaging of information, document delivery, translation, indexing and abstracting service beside the traditional services. For this they have to develop LAN, WAN and giant network like OCLC etc.

In India, the situation is different. Very few public libraries have computer and other facilities. Due to the efforts of UGC and INFLIBNET, most of university libraries are either computerised or are being computerised. For many college libraries and school libraries computer is still a distant dream.

The situation in case of special libraries is far better due to NISSAT effort. Few libraries like ISRO center, DRDO, IITs, IIMs, CSIR laboratories have been properly equipped with IT and CT. Majority of our professionals do not have adequate knowledge to apply computer communication technology for library and information services. Of course we have developed several networks, like ADNET,

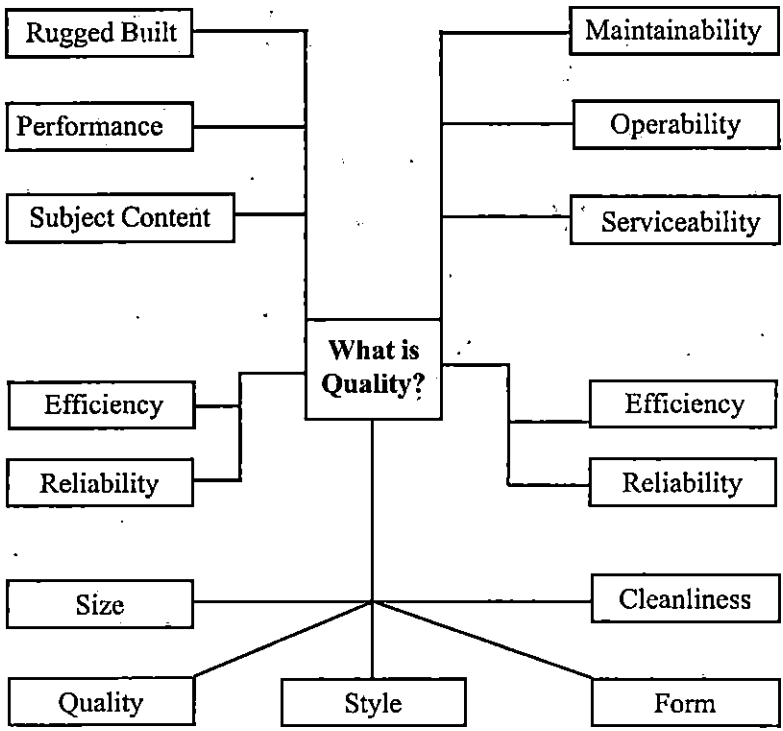
CALIBNET, INFLIBNET. etc. But overall situation is for from satisfactory from international standards.

We are trying for the marketing of our services but the market directly depends on the quality *i.e.* qualitative libraries and information services. The flooding of information have several drawbacks like duplication, insufficiency, lack of scientific proof, outdated, etc. To maintain the quality such type of information must be filtered out.

3. WHAT IS QUALITY?

We all are familiar with the term quality as an elusive entity, an attribute of value which can not be measured or qualified. This has replaced the concepts of quality control and inspection of 1970s and 1980s. Following diagram gives complete idea regarding quality factor in the field of library and information science.

TREE OF QUALITY AND ITS FACTOR



3.1 The Quality of Information Service Means

(*i*) our service must be maintainable for long use,
(*ii*) the user can operate, access it even on his own computer,
(*iii*) supporting document, translation etc. should be provided when required,
(*iv*) it must be versatile and interchangeable,
(*v*) the subject context should be reliable and having good performance. *i.e.* only authentic information should be provided,
(*vi*) it is developed from the raw data, data or knowledge,
(*vii*) it must have efficiency to cope up with the requirement of user,
(*viii*) the provided information must be in required format, language and in a proper form.

3.2 Quality Assurance

The quality assurance has been developed to cope with requirements of modern society. In this context Green and Harry defined "Quality assurance means development of mechanism and procedure that are designed and used to maintain and enhance institutional effectiveness." The Japanese quality guru Kaizan describe it as "continuous improvement".

3.3 Standards Developed for Quality Assurance

After considering the importance of quality assurance, assessment of quality is essential and for that have to develop certain safeguard and standards. Many countries have taken action in this direction. In UK quality assurance agency (QAA) has been established to assess the teaching quality and funding. In India UGC has launched NAAC (National Assessment and Accreditations Council.) and NBA (National Board of Accreditations) under the AICTE. In 1987 ISO 9000 series for standard of quality assurance have been developed by international standards organisation. Several standards in this series have also been developed for specific purpose of quality like quality audit, quality improvement guidelines. ISO series has earned international acceptability and has become popular to compare quality at international level. The quality assurance requires to develop certain managerial techniques. Statical quality control developed by Walter Shewhart in the 1920s based on informal inspection was found

useless in the new era of 1990s. Present era requires new concept, theories and managerial techniques for quality assurance. Some of the trendy concepts of quality assurance techniques are as under

(*i*) Strategic management

(*ii*) Total quality management (TQM)

(*iii*) Operation management

(*iv*) Operation research etc.

Among all available techniques the total quality management is latest and most popular among all organisations.

4. TOTAL QUALITY MANAGEMENT

Both American and Japanese management experts have contributed to TQM in their own ways. Due to this TQM has many facets and became more popular in 1990s. Now it is considered as a new managerial technique applied by many organisations to cope with the customer needs. It emphasises on the human behaviour and active participation of all.

Samula HO (1999) defines TQM as:

Total: Everyone associated with the company is involved in continuous improvement (including customer and suppliers if feasible)

Quality: Customer's express and implied requirement are fully met.

Management: Executive are fully committed (HO- 1999 p. 4)

The total quality comprises various element. It means that people in the organisation have to have a mindset which is appropriate to achieve total quality.

The values required are:

- Create excellence
- Work across formational and hierarchical boundaries.
- Participation of all

Contribution made by different experts has enriched the TQM concept which can be described as under

Expert	*Defination of Quality*	*Main Emphasis*	*Dominant Factor*
W.E. Deming	customer led	process	control of variation
J.M. Juran	customer led	people	fitness for purpose/use
P.B. Croshy	supply led	perfor-mance	total quality control
J.M. Groococ K	value led	process	chain of conformance
K. Ishikawa	value led	people	organization wide quality control/circle
G. Tauchi	supply led value to society	process/ design	quality loss function

The following framework can be developed by the following table.

(*i*) *Driver:* Leadership (management action, Example, vision, policy mission and approach)

(*ii*) *System:* Information analysis (reliable data systematic approach) Planning (prevention)
Human resource (utilisation, educational and empowerment, team, recognition, development)
Quality assurance (checks and balances, corrective action)

(*iii*) *Measure of progress:* Result (trend, comparison, continuos improvement)

(*iv*) *Goal:* Customer satisfaction (feedback)

4.1 Fundamental Principles of TQM

Guiding principles are as under for TQM suggested by HO 1999

Approach	Management Led
Method	Prevention not detection
Objective	Total Customer Satisfaction
Measure	The Cost of Quality
Standard	Right First Time
Scope	Ownership and Commitment
Theme	Continuous Improvement
Ability	Training and Education
Communication	Co-operation and team work
Reward	Recognition and Pride

4.2 TQM Culture Change Model

From:	*To*
Management	Leadership
People are cost burdens	People are assets
Short term objective	Long term mission
Quarterly profit	Customer satisfaction
Quality means high cost	Quality means low cost
Get product out	Exceed customer expectation
Management directed decision	Data driven decision
Reactive	Protective
Dectection oriented	Prevention oriented
Focus on result	Focus on process
Quality by inspection	Quality by intent
Meets specification	Measurable improvements
Compartmentalised expert	Learning organisation
Close held positional power	Employee empowerment
Sequential engineering	Current engineering
Management by control	Employee commitment
Individual heroism	Teamwork
Competition/Confrontation	Co-operation partnership
Functional group success	Enterprise success
Top down communication	Multidirectional communications.

4.3 Need for TQM

Over flooding of information and globalisation have not only affected world economy during last decades, learning process, education and research activities, information access etc., all activities are undergoing a paradigm shift. The success of business enterprise now largely depends on competitiveness of its products in international market. Industrial houses, educational institutions are mostly using techniques of TQM to meet the requirements of excellence.

TQM is now being adapted and used in developed countries for improving public systems like hospitals, universities, airlines, railways, banks etc.

5. APPLICATION OF TQM IN LIBRARY AND INFORMATION SCIENCE FIELD

As TQM is becoming popular day by day, it attracts more organisations to apply scientific management. TQM can be studied by three aspects as per details given below.

5.1. Relevance and Importance of TQM in the context of Indian libraries

(*i*) Slow rate of adapting new technology in library and information centres in India whereas information technology, is making fast inroads, its application in various organisations will also increase.

(*ii*) There is also a vast gape between information society and well equipped library and information centre. This calls for applying new effective managerial technique *i.e.* TQM.

(*iii*) Information processing and providing information service is becoming more and more complex.

(*iv*) Information-collecting, processing, production, dissemination and distribution by private commercial sector is providing greater competition.

(*v*) There will be a competition from product designers, computer experts, telecommunication specialists who have many options available from commercial organisations.

(*vi*) There is a hunger for information and library and information professional have a problem how to satisfy the demand in terms of variety.

(*vii*) Use of IT to redefine services is essential in respect of role and responsibility.

(*viii*) Changing role of library is to provide information and library is to be redefined in relation to future opportunities and challenges.

(*ix*) The aim and efforts are to transfer the library into institutions of creativity, enterpreneurship, innovation and productivity *vis-a-vis* the information provision.

TQM which blends the principled and practices of scientific management and participative management has to be given a fair trial. Undoubtedly it is only with an abiding faith in this philosophy that its benefits can be attained for library and information services..

5.2 Quality Improvement Effort

In a last part of 20th century sufficient attention had been paid for effecting quality into library and information system and services at national as well as international level. Evaluative studies on different areas of library and information science with different angles have been carried out by individual as well as institutional research work which resulted in establishment of several standards and norms. Various tools and technique have been developed in the field. In India such effort are being made by voluntary organisations professional associations, library and information centres and government agencies.

5.2.1 Evaluation Studies

There are two streams available for evaluation studies

(a) Evaluation of information system and services. Which have following objective

- Provision for better products and services only for new system.
- Justification for existing services only for existing system.
- Improved understanding of system.

5.2.2 Evaluation of value added Information System

For the evaluation of value added information system Robert S Taylor has provided model which had clearest and fullest statement on the scope and relevance of value added information.

This model is of general applicability in assesing both the quality and effectiveness of information system. 23 specific values may be added to information system. Which may be divided in six group as under.

Ease of use: Formatting, ordering, browsing, and physical accessibility.

Noise reduction: Item description, subject description, summary description, precision and linkage.

Quality: Accuracy, validity, comprehensiveness and reliability.

Adaptability: Closeness to problem, flexibility, simplicity, stimulatory.

5.3 Quality Improvement Programme

As the profession is facing the challenges of high-tech information system and services there is an urgent need to meet the present requirements as well as future. To cope with the requirements following actions are to be implemented at state, national and international level, which will develop the skill among our professional that will give them status in the society of professionals.

- At a periodic interval offer short courses on newly developing area of information
- Process, information technology etc.
- Organise workshop, seminar, symposia, managerial techniques etc., to develop managerial skill among professionals.
- Continuous education programme for professionals.
- Produce professional literature of excellence.
- Restructure library and information science curricula.
- Specialise courses in different disciplines and subject areas may have to be planned and offered.
- Professional associations and organisations have to move in this direction.
- Make resource sharing of expert and eminent personalities at international as well as inter disciplinary level.
- Beside the above tools personal competencies on following lines among the professional, as TQM is a involvement of all personal competences.
- Desire to know new, varsatility to adopt it.
- Make alliance and partnership.
- Think globally act locally.
- Shoot the barriers and challenges and see opportunities both inside and outside.
- Work well with wholehearted co-operation.
- Provide leadership.
- Make plan, priorities and focuses on weakness.
- Be flexible and positive in a time of continuing change.

6. CONCLUSION

The present age is changing so drastically that every system faces several drawbacks within a short span of time. Library and informa-

tion science profession is no exception. In a changing age, quality must and be assured by professionals. This task can be accomplished only if all institutions associated with every aspect of information would get together to take stock of current situation and create the necessary infrastructure, means and mechanisms. The most crucial resource is indeed the manpower force. If only they have the conducive environment and climate they can produce their best.

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Total Quality Management and User Satisfaction

C. SASIKALA

ABSTRACT

Besides defining the concept of Total Quality Management the article discusses various key features of TQM and relates it to the library and information service environment. It also discusses the relation of quality with user segmentation, and the techniques for assessing user satisfaction.

1. INTRODUCTION

Total quality management (TQM) is a management philosophy which is driven by customer need and commitment to continued quality improvement. It is also defined as managing the entire organisation so that it excels in all dimensions of products and services important to the customer. In such organisations excellence is defined by customer requirement and needs.

Over the years managers have been trying different approaches for improving the performance of their organisation. TQM is one such approach. Though the management principles underlying TQM are far from new, this approach appears to have been used formally only since the 1980s. A shift in its philosophy from statistical view of process control towards a system view with strong internal and external customer orientation has been noticed. Though initially the fundamental characteristics of services have raised a number of management issues, interest in service quality has increased in recent years . One of

the issues raised is how to measure service quality, on which continuing debate is still going on in the profession .

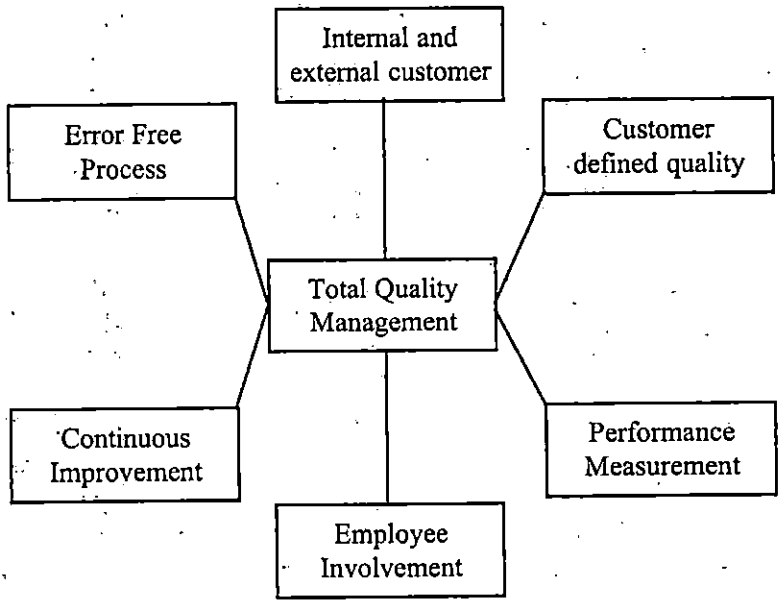
Many organisations have taken up the issue of service quality and initiated the application of approaches like TQM with an intention to improve the quality culture in their organisation.

TQM appears to have been used formally only since the 1980s, its application in libraries and information centres became popular only since 1990s. The library literature since 1992 contains numerous articles and books on this subject.

2. MAIN ELEMENTS OF TQM

There are many definitions given by different authors. Whichever definition is favoured, all accounts of the TQM process have certain key features in common. Essential features among them include shifting of focus on the user, commitment to continual improvement of the quality of services organisation provides, teamwork and empowerment of professionals, and the use of statistical standards and benchmarks.

Main elements of TQM are depicted in the following figure.



The whole gamut of TQM is based on the above said six issues. Importance given and efforts made to address these issues will decide the performance level and quality of services. Perceptions are the parameters to define quality of the services. It is also defined as the gap between expectations and perception. Professionals involvement and team work are the two important factors to be taken care by the management for improved performance leading to qualitative services. These concepts have encouraged participatory management structure in place of hierarchical structure of management. The performance of an organisation and of its constituent departments and sections needs to be measured to enable it to be managed systematically, both to identify where problems are occurring and to find opportunities for improvement. Continuous improvement must be seen as the responsibility of everyone in the organisation. A focus on training, education, communication, recognition of achievement and team work is considered to be an appropriate way to make the staff more responsible towards continuous improvement of the organisation. TQM is also concerned with elimination of waste, reduction of costs and achieving error free processes as part of quality control.

In general quality management involves monitoring and assessing libraries and their products and services to identify opportunities for improvement, taking action to make and maintain these improvements. To determine which process, activities, attitudes or products services need to be monitored and improved there are mainly two ways: assessing (*i*) input from professional staff collected through formal or informal methods, (*ii*) input from users ascertained through direct or indirect methods.

This paper mainly focuses on the importance of user, user analysis and user satisfaction in total quality management of libraries.

3. QUALITY AND USER

Quality is universally accepted as a good thing. People usually prefer those products and services which perform well and which meet the expectations of consumer or intended user. Everywhere the consumer expects quality products and/or services to satisfy their needs, wants and demands. When their needs are not met, then the customer shows indignation with the product or service and complains of poor quality.

Quality is always dependent on what it is that product/service is

used for. On the other hand product–customer–purpose is also important, which means quality for one person is not necessary quality for another. Identifying individual consumer needs, wants and requirement is essential to improve the quality of products and services. It automatically leads to increased level of consumer satisfaction. But serving all the users and satisfying their needs may be impossible. Moreover, it is not correct to needs that a single service will meet the needs of every customer. So, it is always advisable and effective to segment the total consumer population and identify the segment to be served or targetted with tailor made products/services suitable for satisfying the needs and wants of individual segments.

4. SEGMENTATION AND ANALYSIS OF USERS

Users in the library can not be assumed to be a homogeneous group and for this reason it is necessary for the library to try to segment customers with common interests into groups so as to target products and services to meet their specefic and different needs.

Segmentation is a well established marketing tool, which helps in identifying the users under different segments. Among them librarian has to select one or more segment. To serve these segments librarian has to communicate and create awareness among them about the key distinctive benefits of library services.

Libraries must go beyond measuring the consumer segment size and its characteristics into trying to understand how individual consumer see, think, feel and act. Knowing the user is the basis for effective information service, product development, pricing, distribution, and promotion.

Users specific needs and wants have to be identified using different data gathering techniques. 'Survey' is one such technique regularly used by library professionals to assess the needs, perceptions, opinions, attitudes, expectation, and requirements of users.

5. USER SATISFACTION

User satisfaction in libraries is dependent on user expectations, perceptions and demand for the product/service offered.

Every potential user will have some image of a service even before it is offered or utilised. Image may be positive or negative. But it

will shape user's expectations from the service. It may be difficult to assess the user expectation in the case of libraries and information services. Expectation cannot be completely studied through indirect methods like observation, analysis, interaction between library staff and may because it is of more than a routine nature between them. Other techniques like analysing users' suggestion, complaints, bench marking user panel or focus groups can work. Finally user studies can also be undertaken for in-depth study of potential and actual consumers.

Both perceptions and expectation are closely linked. Usually they are influenced by past experience of the user with the products services. Even initial impressions are extremely vital in setting user perceptions. Besides resorting to atmospherics, there are various ways to improve user perception of a service–wide image of consistency and efficiency such as a house style for notices and leaflets and the nature and attitude of staff and so on.

Demand for a product/service originates from an individual need or want, meeting the demand made by the user helps in improving the level of satisfaction of the user. Usually good service generates good use and becomes a good source of generating more demands. Demands are of different types; managing them all in libraries is really a challenging task for librarian.

6. BASIC ATTRIBUTES OF QUALITY SERVICES LEADING TO USER SATISFACTION AND DELIGHT

Literature reports the works of different authors on this area listing different types of attributes.

1. Dimensions or attributes which characterise a quality product or service for the customer are performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality.
2. Some experts have proposed ten dimensions of service quality: tangibles, reliability, responsiveness, competence, courtesy, credibility, security, access, communication and understanding the customer. With the help of these criteria, it is possible to define service quality in terms of difference between customers. Some experts have also traced out different

factors influencing expectations of consumer by administering the ten dimension on a focused group of consumers.

7. TECHNIQUES FOR MEASURING USER SATISFACTION

As already pointed out in previous section the whole of quality management is based on the concept of achieving customer satisfaction. The definition of customer includes both internal and external user. The techniques of measuring customer satisfaction can be grouped under three headings.

(*i*) Complaints and suggestions,
(*ii*) Routine feedback, and
(*iii*) Proactive research

Consumer may express his perceptions regarding the services or products in the from of complaints and suggestions. After confronting with the product or service consumer can assess the suitability of the service for satisfying his needs or wants. Library or information centre should be a responsive organisation inviting the complaints, remarks and suggestions from the users either through formal mechanism or informal methods. They have to be properly recorded and analysed to filter constructive suggestions for consideration in decision-making process. To encourage the user, a kind of rewarding and motivating mechanism needs to be developed. User reactions and responses can be systematically gathered using a feedback mechanism in the form of routine encounters which take place between library staff and users. Face to face contact and active and patient listening besides filling the prescribed feedback forms are the mechanisms needed to know user feelings about the quality and usefulness of the product or service.

Proactive research involves employing systematised methods of questioning and measuring regular and potential user reaction. We have already discussed about some of these methods in earlier sections, under consumer expectation, perceptions and demands. Technique known as walk through audit which seeks to replicate the experience of customers in using a service, can also be suggested. A related technique suggested is mystery shopping conducted often through a specialist who will pretend as a genuine customer among

the regular customer groups and observes their experiences and reactions.

8. CONCLUSION

This article has attempted to trace out some of the important issues related to user satisfaction and quality in a library and information service environment. In spite of the problems posed by the inherent characteristics of services, increasing emphasis on the importance of quality of the services/products is evident through the survey of literature on application of TQM in libraries. It is also evident that there is a shift from informal and indirect methods to the active use of systematic assessment of quality and importance of services offered for measuring the satisfaction of users. This is a healthy change in the environment which gives impetus to the future of customer-centred services in the field.

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Usefulness of Performance Appraisal in Library and Information Centres

A.K. DHIMAN

ABSTRACT

The paper discusses what is performance appraisal? This is still a neglected part of the management aspects as far as the library and information centres are concerned. The role performance apprisal can play in the library and information centres has been discussed. It gives suggestions for its implementation.

1. INTRODUCTION

When we look back at the history of management, we find that management has undergone several changes and it can be divided into Pre-scientific Era, Scientific Era and Human Relation Era. Human relation is the process of effective motivation of individuals in a given situation so as to achieve greater human satisfaction and accomplishment of desired goals. There are various techniques of management which can be applied to any organisation, such as Bureaucratic Management, Participative Management, Management by Objectives and Total Quality Management etc. Although, Total Quality Management is meant for commercial organisations however, it can also be applied in the case of library and information centres management (Dhiman, 1999).

2. PERFORMANCE APPRAISAL

Employee appraisal techniques are said to have been used first time by the Walter Dill Scott, the US Army Officer during first world war

when he adopted the "man-to-man" rating system for evaluating military personnel. During the 1920–30 period, relation wage structures for hourly paid workers were adopted in industrial units. Under this system, the policy of giving grade wage increments on the basis of merit was accepted. These plans were called merit rating programmes which continued to be called so upto the mid-fifties. In the early fifties, however, attention began to be paid to the performance appraisal of technical, professional and managerial personnel. Since then, as a result of experiments and great deal of study, the philosophy of performance appraisal has undergone several changes. Now, the so called merit rating is changed to performance appraisal. It is a continuous learning and development through the performance of jobs and it cannot be denied that organisations can use staff appraisal to control their size. Indeed it is the most powerful tool in rationalising the resources and goes on to suggest that by linking appraisal schemes to selection, training, and career planning, an organisation can control employee behaviour and organisational directions. But, it is one of the most neglected techniques in library and information centres despite its advantages in ensuring the efficient and effective running of the services.

Performance appraisal is the process by which an employee's contribution to an organisation during a specific time period is assessed. And it can be effectively used to improve employee motivation and performance, if used properly and can lead to disastrous conditions if used inappropriately. It is a multi-component process of identifying, observing, measuring and developing human performance in organisations. Where, the identification is the process of determining what areas are to be focused on which job analysis is required as a means of identifying performance scale. The observation indicates that all appraisal criteria must be sufficiently observed so that a fair and accurate judgement can be made. Observations on infrequent and non-performance characteristics may lead to poor ratings. The measurement is the central feature of appraisal. The evaluater must somehow translate the observations into value judgement representing the level of subjects. The development suggests that performance appraisal should also focus on improving future performance.

2.1. Objectives

The following are the objectives of good performance appraisal

system:

- Facilitating integrated growth of employee.
- Helping employees to know their strengths and weaknesses and thus enable them to improve performance of self and organisation.
- Helping the creation of an enabling organisation where opportunities are available for fuller utilisation of the known potentials of the employees. The climate of such an organisation is one of the mutuality, trust, collaboration and openness, etc.
- Generating valid data about employees for personnel functions like training, placement, selection and promotion etc.
- Providing feedback and guidance by the superior to the employees for improvement of their performance.

2.2. Purposes

The following may be the purposes of performance appraisal in any organisations:

- Administrative decisions, such as promotion, transfers and allocation of financial rewards etc.
- Employee's development, *i.e.*, identification of training needs and performance feedback etc.
- Personnel research, such as generation of manpower information for salary and wages determination, career planning, man-job matching promotion, helping supervisors to know their subordinates and also to help subordinates to assess their achievement and failure etc.

3. CHARACTERISTIC NEEDS OF A GOOD PERFORMANCE APPRAISAL SYSTEM

A good performance appraisal system would have the following characteristics:

- The organisation believes that development of employees is in its own interest.
- The organisation will provide opportunities and conditions for the development and optimisation of human resources.
- The corporate management is willing to invest adequate time and resources for the development of employees.
- Managers have concern for the growth of subordinates.

- Employees are willing to avail the given opportunities for growth and receive necessary help from the managers for their development and improving performance.

3.1 Types of Performance Appraisal

Kannappanavar and Bhat (1996), have described two types of the performance appraisal system; Cost Centred Appraisal System and Objective Centred Appraisal System. Of these the first one is meant for profit making organisations and second one is meant for non-profit making organisations. Since, library and information centres are primarily non-profit making organisations, hence the objective centred appraisal can be implemented in these centres.

3.2 Measurement of Performance Appraisal

Several methods and techniques are available for measurement of performance of an employee. Broadly, these can be divided into two methods *viz.*, traditional methods and modern methods. Traditional methods lay emphasis on the rating of the individual's personality traits, such as initiative, dependablity, drive, responsiblity, integrity, leadership potential, intelligence, judgement and organising ability etc. On the other hand, modern methods lay emphasis on the evaluation of work results such as, job achievements rather than personality traits. The result oriented appraisal tends to be more objective and worthwhile, especially for counselling and developemental purposes. Further, both of these are subdivided as shown in Table 1.

Table 1: Methods of Measurement of Performacne Appraisal

Tradtional methods	*Modern methods*
Straight ranking method	Assessment centre
Man-to-man comparison method	Appraisal by results or MBO
Grading method	Human asset accounting method
Graphic rating scale method	
Forced choice description method	
Check list method	
Free form essay method	
Critical incidents method	
Group method	
Field review method	

3.3 Performance Standards

There are some criteria against which individuals' behaviour and output are judged in order to evaluate his performance. Generally, there are three features which define performance standards *viz.*, evaluative component, externally established standards and established entities. The evaluative components serve as criteria for judging effectiveness and established entities usually remain stable over a time and across individuals. As per Locke and Latham (1990), performance standards are the rule to measure or evaluate things. They distinguishe standards and goals, by defining the latter as the aim or end of an action. The standards are usually consistent across individuals, whereas goals are assigned on an individual basis. These are used in a variety of personnel decisions, including but not limited to performance appraisal, training, promotion and reward for performance. But evaluative standards can influence the motivation and job satisfaction of those to whom the standards are applied.

For the development of performance standards, several methods have been suggested:

- production records
- work sampling
- time study data
- standard time data
- subjective standard based on production of fastest worker, group action or personal interview with worker.

Each one of above methods has its own merits and demerits. But the staff formula given by Dr. S.R. Ranganathan contains systematic work, job analysis and routine works etc. This can be used in library and information centres with some modifications.

4. WHY PERFORMANCE APPRAISAL SYSTEM IN LIS CENTRES?

As stated earlier, this is the most neglected and under-used technique of management in the library and Information fields. But, Curter (1985), has described the following points so as to ensure why performance appraisal is needed in library and information centres:

(*i*) To ascertain the definition of the work or job to be performed as there is an urgent need for clear demarcation of the jobs.

(*ii*) Wherever amenable, we should establish acceptable performance standard in terms of specific measurable desired behaviour. This calls for defining units of job, the time taken for doing the job and the modes of performing these jobs.

(*iii*) To identify the present performance level of the library staff in terms of specific measurable behaviour which is considered to be desirable or acceptable.

(*iv*) To identify the needed improvement in library staff behaviour consistent with the objective of library services.

(*v*) To provide a basis of feedback for the performance of library staff in differences.

5. COMPUTERS AND PERFORMANCE APPRAISAL

Like in other fields, computers can play a major role in evaluating the performance of employees working in any organisation. Many types of software packages are available that allow assistance in the evaluation process. As using one software, evaluators choose from a slot of predefined templates designed for different jobs. Evaluators enter goals they would allow like addressed (leadership, job knowledge) and then rate statements that appear (Baig, 1994). Secondly, as more and more workers use computers as a part of job activities, those computers become involved in the evaluation process (Angel, 1989). We can say that performance monitoring by computer is a direct measurement of work, allowing managers to discern the good performers from those who need improvement. Computer monitoring can also benefit workers themselves.

6. SUGGESTIONS

The supervisor (librarian in case of library and information centres) can use performance appraisal data to suggest ways in which employees might perform better in future. He can point out strengths and weaknesses and help employees to identify more ways to accomplish important tasks. To improve and develop the skills of the workers for their own benefit training is also imparted. For this purposes, performance coaching is provided which is a process of giving verbal performance feedback and development suggestions at regular intervals to direct reports, colleagues or external clients. Generally, this is done as a part of a performance management exercise. In order to help the

employees to improve their performance, coaches need to use their observational skills in providing coaching with examples of their behaviour that can be understood and acted upon. This technique can be applied in the context of workers of the library and information centres also to improve their skills and ultimately their performance for the benefit of library services.

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Application of ISO 9000 in Libraries and Guidelines for Certification

HITESH KUMAR

ABSTRACT

This paper mainly discusses the application of ISO 9000 in the libraries covering the various aspects of quality system and service in an organisation.

1. INTRODUCTION

For every developmental activity, information is the key factor. To ensure necessary information, there should be an efficient and properly managed information system to cater to the information needs of the user. A library is defined as an organisation which acquires or accesses information to be passed on or made available to a third party. Every library or information centre should provide information, work in co-ordination with different departments and should be equipped with modern technologies. With the introduction of ISO 9000 series of standards, it is now possible to measure and ensure the quality of management in the libraries. The main objectives of ISO 9000 series is to fulfil customer needs and prevent errors, wherever possible, correcting them according to the requirement of the customer. In all service and production units, a good quality assurance system plays an important role in gearing up the organisation to provide customer satisfaction.

2. QUALITY

Quality assurance is all about ensuring that level of quality what it should be. The term 'quality' needs some explanation. Quality is not

exclusively about aesthetics and top range of products. It is not necessarily a Rolls Royce or a set of most up to date encyclopaedias, it can also be Mills and Boon. Basically, quality is defined as value conformance to the requirement. The concept of quality has generated use, loss avoidance and meeting customer expectation *i.e.*, Total Quality Management (TQM) in constantly improving whatever is done. In other words 'quality' is a measure of achievement of an organisation in terms of customer satisfaction. In the manufacturing of a product or processing of a service an organisation will establish controls for measuring its progress towards the service. These controls are accuracy, appearance, reliability or even competitiveness. There is also another step which has an impact on the final delivery management *i.e.* quality assurance. The term describes all those planned and systematic activities necessary to ensure that a product or service will satisfy a given need. Quality control takes place after the event or after a stage in a process to put things right and error free.

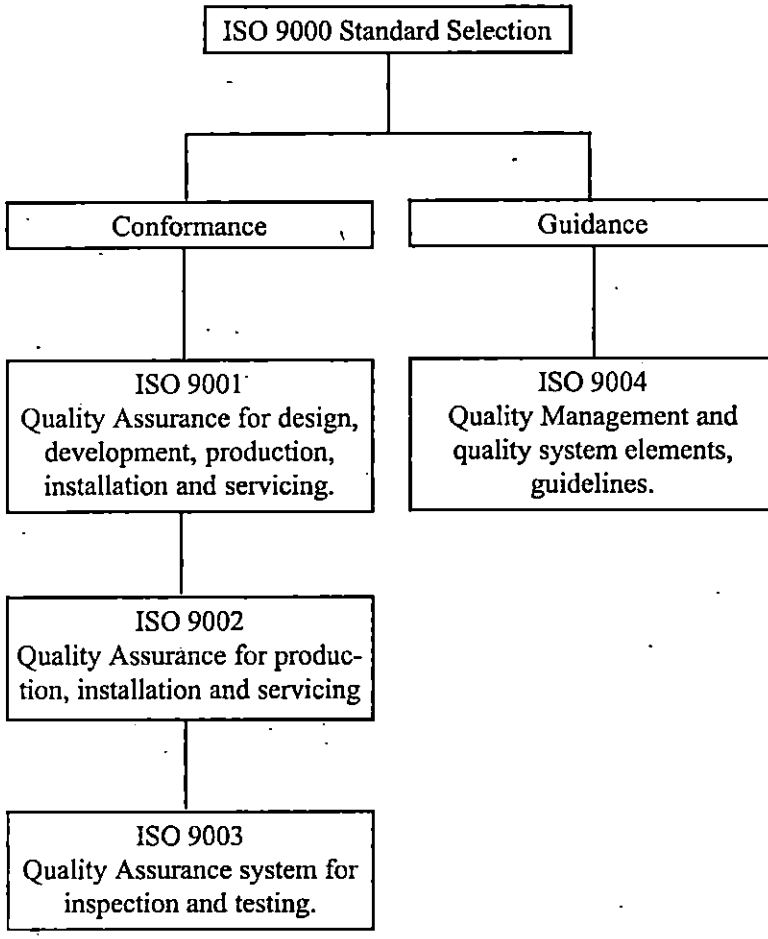
3. ISO 9000

At present ISO 9000 has become a fairly common item in our industrial vocabulary. Basically ISO-9000 comprises of a group of standards that deal with various stages in the manufacture of a product or service. ISO 9000 is a series of standards of quality systems devised to help organisations to establish quality assurance systems. This series was introduced in 1987 by ISO (International Standard Organisation) in Geneva and revised in 1994. This series consists a set of documents, providing standard guidelines and the actual standards which can be used to develop the quality system. The standards are of two types. The conformance standards consist of ISO 9001, ISO 9002, and ISO 9003. The guidance standard consisting of ISO 9004 is a guideline for quality management and quality system requirements.

4. QUALITY MANAGEMENT SYSTEM

The standard requires the quality system, the locality of library's service system is documented. It is a commonsense to have instructions written down so that the right way of doing things is clearly defined. ISO 9000 does not stipulate how the documentation should be

Fig. 1: Structure



arranged and we should find the ways how the routine activities classification and cataloging should be made more effective.

4.1 Quality Manual

This will normally contain the quality policy, the orgnisation's quality objectives and a statement identifying the management representative with responsibility for quality.

4.2 Purchasing

All libraries are usually purchasing books and periodicals. The standard requires that "the supplier shall ensure that the purchased product conforms to specified requirements." These specified requirements require interpretation. Each book will have a title, page numbers and ISBN.

4.3 Product Identification and Traceability

This can be most useful management tool. Ask these questions to yourself.

- If enquirer asks at what stage you are in solving his enquiry, would you know?
- How would you find who took the enquiry?
- If there is a cataloging/abstracting/indexing problems with a particular item, can it be traced?
- Do you know how long a book has been on order?
- The guidelines suggest that traceability is useful in cases of nonconformity, customer complaint and liability.

4.4 Inspection and Testing

There are four aspects to this process. These may be applied to book ordering.

Receiving inspection and testing:	checking against order.
In-process inspection and testing:	book being processed.
Final inspection and testing:	checking book before it goes on the self.
Inspection and test records:	input forms, original records on line or on paper.

4.5 Handling Storage, Packing and Delivery

It is necessary to the customer to ensure that the product is not damaged. Here are some possible requirements for libraries.

- Storage of documents.
- Conditions of storage for security of rare collections.
- Storage conditions for older material including temperature and humidity.

- Ensuring adequate and sufficient re-packing for non book materials.

4.6 Guidelines for Certification

Organisations in developing countries should generally go about implementing ISO 9000 system for a major product involving the following steps:

- Acceptance of quality by top management as a vital element in the business.
- Study of the feasibility of establishing a quality system based on ISO 9000.
- Decision by management board to establish an ISO 9000 quality system.
- Discussions with senior managers about taking up the ISO 9000 project and selection of the appropriate model (ISO 9001, 9002, 9003) to be implemented.
- Training taskforce members in the various aspects of ISO 9000 and the methodology for its implementation.
- Writing down work instructions and procedures for complying with various clauses of the standard.
- Arranging a preliminary audit by an external agency.
- Arranging formal assessment by an accredited certification or registration body.

5. CONCLUSION

ISO 9000 sets up a system of rules and controls rather than a free system. It uses external stick rather than internal motivation to make people comply. ISO 9000 certification is no longer an indicator of quality, but it is like a stepping stone. For libraries, if we adopt this procedure of certification, then it will make the services of the library more relevant and smooth.

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Application of ISO 9000 to Libraries and Guidelines for Certification

SRI VASAPPA GOWDA

ABSTRACT

Due to globalisation and liberalisation international market is facing fierce competition. Higher quality of products and services and improved customer satisfaction are the key to success in the global market. International Organisation for Standardisation (ISO) helps in guaranteeing the quality of products and services through its ISO 9000 standards. In this paper, the author has made an attempt to explain relevant Quality System elements of ISO 9000 series to improvement of library services.

1. INTRODUCTION

1.1 Quality—Meaning and Definition

Quality is the totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs of the users or customers. Quality does not occur just by thinking about it. It happens by doing something tangible. To achieve quality, we must understand customer requirements and the way we satisfy them. We need to understand the work procedures and processes and strive to achieve them continually.

'Quality Excellence' has attained different meanings over a period of time. Initially, it was co-related with 'high cost'. In the present competitive world quality excellence means, meeting 3Ps of quality-Performance, Price and Punctuality. Systems are backbones of quality excellence.

As quality of life improves, demand for better quality services and products also goes up. Customers want to be assured that the quality of products and services for which they pay will meet their expectations.

According to John Ruskin 'Quality is never an accident. It is always the result of an intelligent effort. There must be the will to produce a superior thing'.

The need for quality and Quality Management Systems, hitherto applied to products, is soon realised to be equally essential in the service sector too. This is because, Point of Sale (POS) in the service sector is the place where fingerprints of good or bad quality service are left for all customers to judge the success or failure of that service organiation.

The concept of quality can also be expressed by the simple formula

$$Q = \frac{P}{E}$$

Where Q stands for Quality; P stands for Performance or Result; and E stands for Customers' Expectations.

When Q = 1, the customers' expectations are complied with and full customer satisfaction is atained. This is the ideal situation. The concept of quality has received more attention commercially, politically and academically in the recent years. ISO (International Organisation for Standardisation) deals with such quality system which is called ISO 9000.

1.2 ISO 9000: Quality Assurance Standard

In 1987 International Organiation for Standardisation (Geneva) created the ISO 9000 series of quality standards by the joint action of 26 of the largest consumer and producer nations including India. They have been formulated by people who are conversant with the problems and failures which occur in industries. Therefore, the clauses in the standards are highly objective. The texts of these standards are released by the ISO central secretariat in Geneva.

ISO 9000 is an internationally accepted third party certification that accreditates an organisation for its quality management systems and procedures. This certificate is any organisation's trump-card to

be one-up in the fierce competition of international market. It is the road map to quality system. ISO 9000 standards are the milestones in the journey of Total Quality Management (TQM).

In simple terms ISO 900 quality system can be described as.

Say what you do	:	Describe the quality system
Do what you say	:	Make your system work
Prove it	:	Have your system certified by an independent third party.

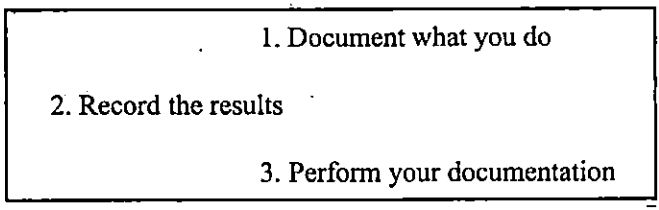


Fig. 1: Basic Quality Standard

The series of ISO 9000 is a comprehensive set of quality system standards. The clauses are not specific to any one industry. They are generic guidelines for maintaining the quality rather than standards and models for ensuring the quality of a company's goods and services.

1.3 System Cycle of Quality Standard

To implement and maintain ISO 9000, the system is set up in the form of a 'Continuous Cycle'. The system cycle consists of four tasks.

(*i*) Documenting (Planning) the system,
(*ii*) Implementing (Applying) the system,
(*iii*) Checking (Auditing) the system,
(*iv*) Fixing (Acting on) the system.

1.3.1 Documentation

The key aspects to get ready for ISO 9000 audit are to examine current documentation and see if it is current and applicable. Documentation communicates the objectives of the system, policies of the organisation, responsibilities with the organisation and operational procedures.

The quality system's documentation is organised in four levels:

(*i*) site quality manual, is a statement of the organisation's quality policy.

(*ii*) contains the procedures that define activities at a departmental level.

(*iii*) contains the work instructions.

(*iv*) contains other documentation (including records) and is a compilation of forms for the quality management system.

This will be illustrated in the following figure.

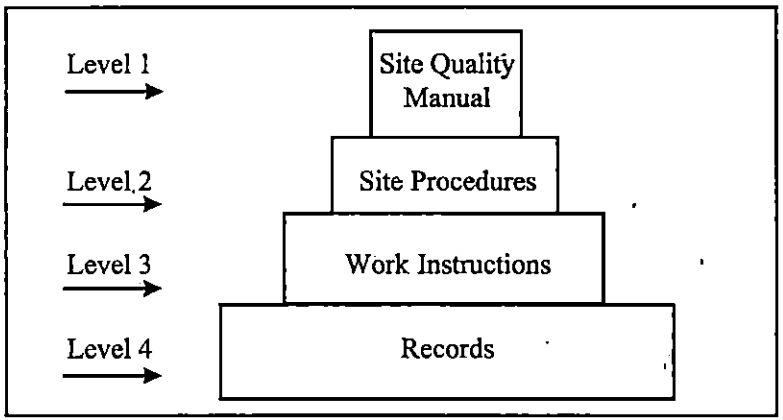


Fig. 2: Four levels of documentation

2. OBJECTIVES OF ISO 9000 SYSTEM STANDARDS

The objective of the ISO 9000 series is to provide a mechanism for:

(*i*) Determining and fulfilling customer needs by providing quality products and services.

(*ii*) Providing confidence to its own management that the intended quality is being achieved and maintained.

(*iii*) Preventing erros wherever possible, if not correcting them in such a way that the process is improved and customer needs are consistently met at the lowest cost.

3. PARTS OF ISO 9000 SERIES

ISO 9000 is a set with 6 parts. ISO 8402 consists quality system vocabulary. Three of them address specific quality systems (ISO 9001,

ISO 9002, ISO 9003) and two are guidelines (ISO 9000 and ISO 9004). This is represented as:

ISO Series	*Title*
8402	Quality Systems Vocabulary
9000	Quality Management and Quality Assurance Standards—Selection and Use.
9001	Quality Systems—Models for Quality Assurance in Design/Development, Production, Installation and Servicing.
9002	Quality systems—Models for Quality Assurance in Production, Installation and servicing.
9003	Quality Systems—Model for Quality Assurance in final Inspection and Tests. Guidelines on development of Quality
9004	Management Systems to minimise costs and maximise benefits.

4. SERVICE INDUSTRIES AND ISO CERTIFICATION

There has been an increasing trend in service institutions towards developing qualitative standards for their services. Due to globalisation and liberalisation competition among air services, postal and courier services banking, and financial agencies, health services emphasises the need for service quality standards.

Customer satisfaction plays an important role to stay in the service business. Implementing international quality system standards is recognised as one of the essential pre-requisites towards this end. Since the services provided by the institutions are intangible in nature, they should develop certain methods for their assessment and measurement. Important methods are customer satisfaction indexes, surveys, questionnaire, interview, observations etc.

5. ISO 9000 CERTIFICATION TO LIBRARIES AND INFORMATION SYSTEMS

With the advent of modern technologies, libraries are attempting to improve the scope of their services. As a result of such innovative

efforts, today libraries are providing sophisticated services such as on-line services to information, Hyper-text information services and OPAC systems which have succeeded in globalising the services of information system. The research in Library and Information Science is constantly attempting to improve the quality of library services.

6. ISO 9002 QUALITY SYSTEMS—MODEL FOR QUALITY ASSURANCE IN PRODUCTION, INSTALLATION AND SERVICING

The product of a library is information. The services provided by the library are intellectual, invisible and intangible in nature. Libraries do not design their services, so quality system model ISO 9002 is selected for application to libraries. Since library is a service institution, the ISO 9004-2:1991 is considered as guideline for services. Twenty quality system requirements are given under section 4 of this series.

7. QUALITY SYSTEM REQUIREMENTS

7.1 Management Responsibility

7.1.1 Quality Policy

It is the responsibility of the management to formulate a flexible dynamic quality policy for the smooth functioning of the library which should ensure the easy access to information for its users at the right time with minimum cost. The laws of Library Science: Books are for use, every reader his/her book, every book its reader and save the time of the reader/staff are even today relevant to the quality policy. Therefore, the quality policy should aim at user satisfaction and the trained staff contribute to develop the quality system.

7.1.2 Organisation

7.1.2.1 *Responsibility and Authority:* The responsibility and the interpersonal relations of personnel who manage, perform and verify. Work effective quality shall be documented particularly for personnel who require the organisational freedom and authority to:

(*i*) Initiate action to present the assurance of any non-conformities relating to the quality system

(*ii*) Identify and record any problems relating to the product, process and quality system.

(*iii*) Initiate, recommend or provide solutions through designated channels

(*iv*) Verify the implementation of solutions.

(*v*) Control further processing until the deficiency or unsatisfactory condition is corrected.

In Libraries basically there are three sections.

(*i*) Acquisition section

(*ii*) Technical section,

(*ii*) Information retrieval service section

Therefore, the responsibility of the chief librarian is to co-relate all the three sections to provide fruitful services to the users.

The acquisition section has the primary responsibility to build need based user-oriented collection of books and reading materials. The technical processing section has to process the books and reading materials and to see that easy access of materials by the users is possible. Information retrieval service section provides a number of service to its users starting from circulation to reference services, referral services, inter-library loan service, current awareness service, SDI service, etc.

7.1.2.2 *Resources:* The resources of the quality system of a library include (*i*) Manpower resources, (*ii*) Material resources, (*iii*) Financial resources, (*iv*) Training to upgrade knowledge.

7.1.2.3 *Management Representative:* The management representative has a good working knowledge of an organisation. In the case of a library, the chief librarian is the liaison officer to the quality system. He should see that the quality system is established, implemented and maintained in accordance with prescribed standards. From time to time he should report to the top management about performance of the quality system.

7.1.3 Management Review

According to ISO 9000 guidelines the management should review the quality system at defined intervals usually once in six months. In libraries, it is the responsibility of the librarian to review the operations. The in-charge librarians of different sections shall be the

members of the review committee. The review shall be based on user survey, reports, user satisfaction index and corrective and preventive action records. Activities and results of the review should be documented and evaluated. If any changes are indicated, they should be discussed in detail with the concerned staff and if any changes are found necessary to improve the quality system, they should be implemented in a timely manner. This will provide scope for judging the adequacy of the quality system in meeting the quality policy and quality objectives of the library.

7.2 Quality System

The quality system comprises the organisational structure, procedures, processes and resources, needed to implement quality standards. The purpose of quality system is to enable the library to achieve, sustain and improve the quality in library services.

7.3 Contract Review

The concept of contract review, even though applied in the manufacturing sector, is also applicable to service institutions like a library. In order to render quality services in a library, it is essential to formulate and document the information needs and expectations of the users. This is a complex situation in libraries where different users' needs differ from one another.

7.4 Design Control

Since the libraries do not design the products, this clause of the international standard does not come under the purview of quality system.

7.5 Document and Data Control

Libraries which implement quality systems should establish and maintain documented procedures to control documents and data that relate to the requirements of the international standard.

The documents may be relating to (*i*) Polices, (*ii*) Quality manuals, (*iii*) Standards and specifications relevant to the functioning of libraries, (*iv*) Classification schedules, (*v*) Cataloguing codes, (*vi*) Work instructions, (*vii*) Budgeting systems, and (*viii*) Personnel, etc.

This control shall ensure:

(*a*) The pertinent issues of appropriate documents are available at all locations

(*b*) Invalid or obsolete documents are periodically removed from all points of use.

7.6 Purchasing Data

The libraries should establish and maintain documented procedures to ensure that purchased books and reading materials conform to specified requirements. The in-charge librarian of acquisition section should verify all the details like edition, publisher, author, cost, year of publication and authenticity of the purchase order, etc.

7.7 Control of Customer Supplied Products

This clause does not apply to library services. It relates to the finished products.

7.8 Product Identification and Traceability

It plays an important role in libraries. Once books and journals are received in the library, they pass through various stages before going to the shelves. Various sections like acquisition section, technical section, new arrivals section should properly check the material. The libraries should develop a systematic procedure to identify the position of a particular document at any given time. This is an important clause to improve the quality of the library services.

7.9 Process Control

Ever activity has a process. A library has different functions right from acquisition of books to rendering of information services. Each of these functions will have a process. The quality system of the library should keep an eye on every activity and each should be documented.

According to ISO 9000 quality system the process control requires:

(*i*) Knowledge of what the process is required to achieve, (*ii*) Various activities in the process cost-effectiveness of the activities, (*iii*) Knowledge of a suitable working environment, and (*iv*) Suitable maintenance of equipment to ensure process capability.

7.10 Inspection and Testing

The library should establish and maintain documented procedures for inspection and testing in order to verify that the specified

requirements for the service are met. The records should be maintained for inspection and testing.

Inspection and testing is of three kinds:

(*i*) *Receiving Inspection and Testing:* This is verification of conformance to the specified requirements and to inspect whether it is in accordance with the quality plan, and documented procedures.

(*ii*) *In-process testing:* This clause aims at detecting non-conformity at the earliest stage of processing to avoid wasteful effort on an exercise that is going to be rejected. In libraries, the in-charge librarian of books and periodicals section should keep an eye on all these activities.

(*iii*) *Final Inspection and Testing:* This clause is of minimal application in libraries, its application is limited to software and related automated routines.

7.11 Control of Inspection, Measuring and Test equipments

Library's main products are information services which are invisible and intangible in nature. Since no measuring equipments are used, this clause is not applicable.

7.12 Inspection and Test Status

The inspection and test status of books and journals shall be identified by using markings, like unauthorised stamps, tags, label routing cards, inspection records or any other suitable means which indicate the conformance or non-conformance of books and periodicals with regard to inspection and test performed. The various stages of inspection and test status in a library are (*i*) Books accepted for approval, (*ii*) Books purchased, (*iii*) Books waiting for inspections, (*iv*) Books waiting for accessioning, (*v*) Books waiting for technical processing, and (*vi*) Books waiting for new arrivals section, etc.

7.13 Control of Non-conforming Products

The quality system of the library should ensure that non-conforming books and reading materials should be prevented from unintended use. This control shall provide for identification documentation, evaluation and disposition of non-conforming books and reading materials.

7.14 Corrective and Preventive Action

Corrective and preventive action is necessary to eliminate the causes of actual and potential non-conformities which shall be to a degree appropriate to the magnitude of problems and commensurate with risks encountered. In quality systems, corrective and preventive actions are necessary due to: (*i*) Product non-conformity, (*ii*) Process non-conformity, (*iii*) Systems non-conformity.

The procedures for corrective action should be developed. The sources of information for corrective action could be through observations, surveys, internal quality audits, etc. Causes for non-conformity should be identified and corrective measures should be implemented at the first instance and an action plan should be developed to prevent its recurrence.

7.15 Handling, Storage, Packaging, Preservation and Delivery

This is one of the highly relevant quality system requirements for the libraries. To provide services to the users the processing and storage of collection of the library should be handled systematically. It should be done in a structured manner and preserved as per laid down standard, for future use and retrieved with procesion.

7.16 Control of Quality Records

The libraries should establish and maintain documented procedures for identification, collection, indexing, accessing, storage, maintenance of quality records, etc. All records should be stored and retained in such a way that they are readily retrievable in facilities that provide a suitable environment to prevent non-conformities. The quality records are concerned with (*i*) Management review records, (*ii*) Reading materials, (*iii*) User complaints, (*iv*) Corrective and preventive actions, (*v*) Follow-up actions, (*vi*) Audit result records, (*viii*) Training records, and (*ix*) Qualified personnel records . . . etc.

7.17 Internal Quality Audits

It is an important aspect of quality system requirements for its effectiveness. The periodic internal quality audit is necessary for the smooth follow-up of the system. The effectiveness of the quality audit depends upon the skills of the auditors. It should be planned well in

advance. The audit report should be reviewed by the management committee.

7.18 Training

Training is an important aspect at all levels to keep the personnel competent. In libraries, the staff should be professionally trained. They should be exposed to the knowledge of ISO 9000 implementation and quality audits. Personnel performing specific task shall be qualified on the basis of required qualification, training and experience. Records of training should be maintained.

7.19 Servicing

Since this clause applies to products after sale, it is not applicable to libraries.

7.20 Statistical Techniques

The statistical techniques are required to assess the quality assurance system of the libraries. The need for statistical techniques arises to make sure that the services provided are capable of meeting the user needs consistently. Important seven statistical techniques used in ISO 9000 are—check sheets, pareto analysis, histograms, cause-and effect diagrams, stratification, scatter-diagram, graphs and control charts. The application of statistical techniques requires well-documented procedures for sampling, collection and analysis of data as well as decision-making.

8. QUALITY INDICATORS OF LIBRARY OPERATIONS

The following are the important quality indicators of library operations which help in ISO 9000 certification. (*i*) Library services, (*ii*) Training programmes, (*iii*) Automation, (*iv*) Physical location, (*v*) Infrastructure facilities, (*vi*) Collection development practices, (*vii*) Circulation systems, practices, (*viii*) Classification and cataloguing systems, (*ix*) Budgeting systems, (*x*) Rewards and regards to the employees, (*xi*) Library records, statistics, and (*xii*) Library committees etc.

9. ADVANTAGES OF ISO 9000 QUALITY SYSTEM TO LIBRARIES

The ISO 9000 model of quality system is built on the principle of achieving customer satisfaction by preventing non-conformities at all stages. Right tasks are carried out rightly first time and every time.

(*i*) Identify the user needs,
(*ii*) Transform an adhoc method of quality control into an organised and cost-effective quality management system,
(*iii*) Avoid duplication of work,
(*iv*) Application of modern technologies to compete with international standards,
(*v*) Timely training of staff,
(*vi*) Application of corrective and preventive action plans,
(*vii*) Preparation of job mannuals,
(*viii*) Regular and systematic collection development etc.

10. CONCLUSION

ISO 9000 family of standards has evolved on the basis of consensus. It is a series of documents that provides guidance to develop and implement an effective quality management system. ISO 9000 does not dictate the system to an organisation for use. It does not tell an organisation what or how to do its job. The standard represents a quality management and directs an organisation that it must document what it does, perform according to the documents and keep records. Therefore the certification provides a guarantee for the quality of products and services in the international level. It is said that 'nowhere is the quality more critical than in organiations and institutions involved in handling information'. In view of this, libraries have to go for ISO 9000 certification to win the confidence of user community.

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Application of ISO 9001 in Libraries: Issues and Problems

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ABSTRACT

Libraries are generally part of the parent organisation and all aspects of their activities are not measured in terms of standards. The standard's requirements of library should extend beyond library operations and may include parent body policies and objectives. This paper explains the issues and constraints in achieving the standard requirements in university libraries.

1. INTRODUCTION

Libraries are expected to provide high quality service, and many a time the library staff are unable to satisfy the users and incur their displeasure. Quite often one can hear, a common complaint by the library staff that it is a 'thankless job'. When a reader fails to get the required documents, the staff incur the displeasure due to this non-availability.

The major reasons for this may be the following:

(*i*) The library might not have procured it.

(*ii*) If it is procured, it may still be in processing.

(*iii*) If it is processed and shelved, it might have been issued on loan.

(*iv*) If it is returned, it might have been not replaced or misplaced.

(*v*) or it might have been sent for binding and not returned yet.

(*vi*) or it might have been lost and untraceable.

In this modern knowledge society, the role of libraries have become more complex and extends beyond just issuing books. With the introduction of IT users expect very advanced and sophisticated services. Unlike olden days, the image of the library is not judged by mere large number of documents or premises. Now libraries are expected to provide the right information, to the right user, in the right format, at right time. A drastic change in the whole approach to the library management is the need of the hour.

2. TQM IN LIBRARIES

Total Quality Management (TQM) is slowly gaining popularity among academic and research libraries in India. It is a continuous process which helps to achieve quality of service at a reasonable cost. TQM demands daily commitment from each one of the staff from top to bottom.

Librarians have now realised the significance of their role as agents of information transfer. To justify their existence and to prove their capabilities in knowledge organisation and dissemination they started adapting to newer management techniques like TQM in libraries.

3. ISO 9000 SERIES

To evaluate the quality of information in the present day electronic information environment, the ISO 9000 series of standards have become popular and received a wide acceptance in every field of activity.

3.1 ISO 9004-2

ISO 9004-2 provides guidelines for service organisations for establishing quality system. The necessity of providing separate guidelines arose because service differs from other products. Service quality includes aspects such as effective communication, suitability to customer, efficient service personnel, waiting time and delivery time etc.

3.2 ISO 9001

ISO 9001 is based on twenty requirements, which are listed below:

(*i*) Management responsibility
(*ii*) Quality system

(*iii*) Contract review
(*iv*) Design control
(*v*) Document Data control
(*vi*) Purchasing
(*vii*) Purchaser supply product
(*viii*) Product identification and tractability
(*ix*) Process control
(*x*) Inspection and Testing
(*xi*) Inspection, measuring and test equipments
(*xii*) Inspection and test status
(*xiii*) Control of non-conforming product
(*xiv*) Corrective and preventive action
(*xv*) Handling, storage, packaging and delivery
(*xvi*) Quality records
(*xvii*) Internal quality audits
(*xviii*) Training
(*xix*) Servicing
(*xx*) Statistical technique

4. ISO 9001 IMPLEMENTATION

The feasibility of implementing these requirements in university library will be now examined here.

4.1 Requirement 1: Management Responsibility

Management responsibility involves commitment of top management, which is initiating and documenting a quality policy and ensuring that it is communicated and understood throughout the library. The commitment at the top management level is vital and it should be made visible. Quality policy may be brief and precise but the objectives should be more specific.

4.1.2 Feasibility

Any experienced library professional is aware that secondary importance is given for libraries because they are only a sub-system of university library. Number of debates and arguments have taken place at so many national and international fora, where the significance of university library has been emphasised in research and development activities.

Yet, the top management of university libraries are more engrossed with the problems of the university as a whole and give comparatively less attention to the problems of libraries. In this context, the commitment of the top management may not be adequate. The second factor in this first requirement is establishing quality policy and formulating objectives. Through there are vague policies (which are mostly financial aspects such as how much discount should be given by the vendors etc.) so far no university has formulated clear cut objectives for libraries with regard to the quality of the service.

Responsibility and authority is the third factor and most of the librarians have very little authority and more responsibilities. Though the top management is very well aware that without authority or power the responsibilities cannot be carried out properly. They choose to ignore this fact. In most of the situations the librarians are mute spectators of transferring troublesome staff to the libraries from other departments and they have no power even to stop such unwarranted transfers of personnel.

Another important factor reading the implementation of the first requirement is that, the top management should arrange to provide equipment, facilities and adequate personnel for all activities of the library. Libraries are well-known for shortage of staff and facilities. Without these essential factors implementation of the first requirement seems to be quite remote.

A senior member should be designated as quality assurance Manager who should have both responsibility and authority to identify and evaluate quality problems and suggest possible solutions. This is quite a sensitive issue because seniority alone will not be considered to select a staff for this. Seniority and capabilities do but always go together.

Provided, that all the above steps have been taken, the first requirement is not complete without management review, which should be done periodically. Such reviews should identify possible improvements.

4.2 Requirement 2: Quality system

This includes definition of organisation structure, responsibilities, procedures and resources needed to implement TQM for the whole library. For this, like the first stage a document plan should be made indicating the following.

- Location and accommodation for all activities with infrastructure facilities
- Planning human resource requirement,
- Developing tools and techniques for quality control, testing and evaluation;
- Formulating dynamic criteria of standards for all products and services
- Preparation of the final document of the plan

The quality planning should be clearly related to the polices and objectives. It should specify squence of activities and associated time frame.

4.2.1 Feasibility

The quality system requires a well-defined staff structure. Analysis of the feasibility of this factor reveals that many universities do not adopt a definite staff structure. The existing staff structure in many university libraries do not relate to either the collection or number of users, nor the activities. Moreover the responsibilities are not well defined. Each university library adopts its own polices according to its convenience. UGC norms regarding the appointment of assistant librarians, specify that the staff must get through the UGC National Test but it has not specified any clear cut norms for the promotion of incumbents who have already put in long duration of services as technical officers or library assistants. The staff arguments is that when all other categories of staff in the university have automatic promotion, why should the assistant librarian's post is advertised, depriving them of chance for promotion. This is the case in most of the south Indian universities which create conflict and demoralisation among the library professionals in university libraries. Proper staff motivation cannot be achieved in view of such irrational personnel policies.

Apart from that, developing exact tools and techniques for quality control, testing and evaluation of each product and service, is not easy. Relating the quality plan to policies and objectives in a well-defined manner requires specialised knowledge, because identifying some quantitative measures to evaluate the quality of services and further relating it to the objectives is not an easy task, unless both objectives and services are translated into some quantifiable measuring units.

4.3 Requirement 3: Contract Review

Contract review occurs when procurement contract is formulated between supplier and a buyer. Both parties should agree written terms and conditions for supply of any product.

4.3.1 Feasibility

The limited financial resources make the librarians and the book sellers enter into some contract where the books can be supplied only after approval basis. Order for periodicals are also placed only by assessing the quality of the specimen copies by the subject specialist.

4.4 Requirement 4: Design control

An organisation should establish control measures for designing a product or function to ensure the specified requirement.

4.4.1 Feasibility

When a library designs a new database on a regular basis only then this clause is applicable

4.5 Requirement 5: Document Data Control

The standard requires that most appropriate documents should be circulated and the obsolete documents should be removed. Security of documents is also important. Sensitive and confidential documents should have restricted circulation

4.5.1 Feasibility

Any changes in the polices objectives and procedures must be circulated in the libraries.

4.6 Requirement 6: Purchasing

The library should ensure that all purchased materials conform to the specified requirements.

4.6.1 Feasibility

This is usually done in the libraries, *e.g.* specifications for binding and the specifications for the supply of catalogue cards.

The standard requires that the ordering or purchasing document should include a clear description of what is being purchased.

This is quite feasible as far as the libraries are concerned. If a vendor supplies a book which has not been approved or ordered that can be easily returned.

This clause insists on a verification of purchased product

This requirement is feasible since collection of documents before passing the bill is done in libraries.

4.7 Requirement 7: Purchaser Supplied Product

The library has no control over the content of the documents, which are donated, or the dissertations. In such cases, procedures should be formulated in answering queries of users, which are raised about such documents.

4.7.1 Feasibility

In case of donated documents, if they are not up to the standards they need not be accepted. But dissertations on controversial issues (such as criticising a political party) cannot be refused to be included in the collection.

4.8 Requirement 8: Product Identification and Tracaability

This recommendation suggests that at all stages of production it must be possible to trace and identify the product.

4.8.1 Feasibility

It is quite feasible to apply this requirement in libraries. In fact tracing a document or a journal issue, is the job quite frequently done by the library staff. Check points for every stage of processing and dissemination will solve the problem.

4.9 Requirement 9: Process Control

This requirement demands careful monitoring of all the processes, which may have an impact on the quality of service.

4.9.1 Feasibility

This is very important in libraries because a wrong classification number assigned to a book will lead to misplacement and waste of time the users as well as the staff. Hence, every stage of processing and shelving must be monitored carefully.

4.10 Requirement 10: Inspection and Testing

The four aspects to be considered in this are:

- Receiving inspection and testing
- In-process inspection and testing
- Final inspection and testing
- Inspection of test records

4.10.1 Feasibility

Executing this requirement in libraries while purchasing and installation of costly equipment such as computers, air-conditioners, photocopying machines etc, is very essential, particularly due to the limited finance. Purchasing of equipment comes under non-recurring expenditure and allocated funds for such activities in libraries are done only after long intervals, and repeated requests.

4.11 Requirement 11: Inspection Measuring and Test Equipment

After purchasing and equipment, it should be checked against another, more accurate and more precise standards.

4.11.1 Feasibility

This requirement can be applicable for computers. For example, virus detection can be used while introducing new software.

4.12 Requirement 12: Inspection and Test Status

This requires that records should be maintained to show that work has been carried out according to the specifications and customer requirement.

4.12.1 Feasibility

This can be applied to the SDI service

4.13 Requirement 13: Control of non-conforming Product

This requirement indicates the control of factors which fail to meet specified requirement. Everyone in the library is responsible for identifying and reporting non-conformity.

4.13.1 Feasibility

This is applicable for computer input erros.

4.14 Requirement 14: Corrective and Preventive Action

This requires that action is taken to identify and prevent recurring problems.

4.14.1 Feasibility

This is applicable to recurring problem like pilferage of documents.

4.15 Requirement 15: Handling Storage Packaging and Delivery

This is to ensure that product is not damaged during handling, storage, packaging and delivery.

4.15.1 Feasibility

This is applicable for all the documents.

4.16 Requirement 16: Quality Record

A quality record refers to the record of the organisation and its maintenance, its retrievability and length of retention. Records in libraries can be of two types namely supply and performance records, which are the requirements for quality system management, and users survey record which is the requirement for survice quality management.

4.16.1 Feasibility

Records could be maintained in libraries for the vendors and publishers of documents and the records for user requirements, their specific needs and their feedback.

4.17 Requirement 17: Internal Quality Audits

This is done to find out whether the documented system meets the requirements of the standards. Procedures should be prescribed to carry out the audit.

4.17.1 Feasibility

Checklists should be prepared to identify the elements, procedures, services and requirements for conducting audit..

4.18 Requirement 18: Training

The standard requires procedures should be identified for training, which imparts specific skills.

4.18.1 Feasibility

For example, training for staff to use computer and library management software should be given at regular intervals. They should also undergo certain refresher courses or attend workshops to keep pace with fast developing information technology.

4.19 Requirement 19: Servicing

After-sales service or maintenance of the product may not be applicable in libraries

4.19.1 Feasibility

Once an information or a document is furnished to the user library staff don't go for further service. Only feasible activity that they can update what is already given to the users.

4.20 Requirement 20: Statistical Technique

This requirement advocates application of statistical techniques to maintain quality system.

4.20.1 Feasibility

Now cost-benefit and cost-effective analysis are applicable for identifying the most demanded periodicals and for determing the effectiveness of a service.

The above discussion reveals that many of the requirements are feasible provided some of the pre-conditions are satisfied by the management or authorities..

5. PRE-CONDITIONS

Generally ISO certificate is obtained for the whole organisation. Library is only a sub-system of the whole system. Hence if a university library wants to obtain the certificate, the whole university must prepare for it. Without the full co-operation of the top management the university library cannot obtain the certificate. Hence the top management must be willing to extend full co-operation for the librarian.

For any library there is a minimum requirement for each factor such as manpower, and other infrastructure facilities. In some university libraries, there are no assistant librarians and in some universities

there are no deputy librarians. In some libraries assistant librarians and deputy librarians are there but not authorised to carry out the responsibilities effectively. The manpower requirement is determined by calculating man hours. Prof. Seetharama has suggested the norms for manpower in his book, entitled "Guidelines for planning of Libraries & Information centers" (1990). Providing the required infrastructure facility depends to what extent the university can allocate funds for the library. Sufficient of space for each activity should be available in the library. Once these conditions regarding three important factors are satisfied, certain pre-requisites pertaining to the twenty factors of standard should be examined before implementing them in a library.

6. PRE-REQUISITE REGARDING THE TWENTY FACTORS

The factors such as 'Commitment at top management' is judged by certain questions which are framed in the checklist. For example 'Do you have commitment at senior level'? In a university the top management includes the Registrar, Vice-Chancellor, Library Committee and the syndicate. Most of the university libraries are 'ideal bureaucracies' and every issue has to pass through a number of tables. A delayed decision may slow down the implementation of ISO standards. The next significant factor regarding clear cut objectives and policies. As it has been mentioned earlier, the policies regarding finance is there in libraries. For example the amount of discount expected from the booksellers are specified by the libraries. But formulating clear cut tangible objectives for each section in the library is quite a complicated process. The objectives should be based on the requirements of the users and the extent of satisfaction of the users should be yardstick to ensure the fulfilment of the objective. And this depends again on resources and other infrastructure facilities available in libraries.

7. CONCLUSION

Though the above discussions seems to discourage the librarians from implementing ISO standards, these are certain practical issues which need serious consideration before implementing the standards. But

IIT library, (Madras) has proved that it is feasible. The attainment of ISO certificate for libraries is highly dependent on three factors namely, commitment of the higher authorities, the financial position and co-operation of the administrative and library staff, at all levels. The bureaucratic procedures should be relaxed to a great extent and librarians should have more powers and freedom to discharge his responsibilities.

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Application of ISO-9000 in Libraries and Guidelines for Certification: A Case Study of CRRI Library

ASHA RANI AND A.K. JAIN

ABSTRACT

Central Road Research Institute is looking for ISO-9001 certification and S.R. Mehra Library being a part of the Institute is also going to be certified. Guidelines for certification along with systems design and development and achievements are discussed in this paper.

1. INTRODUCTION

Prof. S.R. Mehra Library of Central Road Research Institute, New Delhi has been serving its users for last about fifty years. Bulk of its users consist of engineers, scientists, academicians and highway professionals within the institute and also from external organisations/ institutions. About two years back, the Institute decided to go in for ISO-9000 certification. As a part of the system design and development, ISO quality activities were identified in the Institute for ISO certification. Later on the apex advisory body of the Institute named 'Research Council' (RC) suggested to go in for certification in the following four areas.

(*i*) Testing and certification;
(*ii*) Training, including HRD;
(*iii*) Information management; and
(*iv*) Consultancy services

Keeping in view the above four areas the quality activities were re-identified and finally 108 activities kept for certification purpose. Out of that three activities pertain to library and these will be discussed in detail in this paper.

2. ISO 9000 QUALITY MANAGEMENT SYSTEM IN CRRI LIBRARY

Central Road Research Institute (CRRI) in the pioneer in the area of roads and road transport research and consultancy services. CRRI is seeking ISO-9000 certification in four areas as mentioned earlier. Information management is one of the areas identified for the purpose. In CRRI the library activities are going to be certified as a part of the Institute's total activities. In CRRI library, the following quality activities have been identified for certification.

(*i*) Library services: This activity includes reference service, literature search and bibliographic services, current contents of the periodicals, document supply services, technical processing, circulation services, inter-library loan services, shelving, shelf rectification and stock verification, user education and training on operation of World Interchange Network (WIN) node and accessing Internet;

(*ii*) Identification and acquisition of books, periodcials and technical reports; and

(*iii*) Maintenance and updating of standards specifications and code of practice.

All these activities are documented in a standard format which conforms to the ISO-9000 Quality Management System. Documentation ensures that everyone works by the same rules or guidelines and because they are written down and clearly defined, it is possible to check whether what has been agreed is being carried out. Activity (*i*) above mainly covers the sub-activities under clause 4.9 named as process control, and activity (*ii*) can be put in clause 4.6-ourchasing of ISO 9001 Standard. All libraries are purchasers usually of books and periodicals. The Standard requires that 'the supplier shall ensure that the purchased product conforms to specified requirements.' This procedure 'Identification Reports.' clearly states the methodology to be followed for purchasing and handling of bills and receipts. Activity

(*iii*) as mentioned above also comes under clause 4.9 of the Standard. All the sub-activities are defined in a sequential and simple method. Few important sub-activities are dealt here in detail.

2.1 Collection Development

Collection development activities are critical to the success of other activities of the library. They give rise to resources by which other services are provided. Thus, this should be the first area to implement the quality plan. Librarian should set standards by which collection or other services will be measured, relate the result to the original goals of the library and take necessary steps to overcome the problems faced in the collection development. Stages incorporated in the collection development are: policy development, selection and acquisition of materials, evaluation of collection, and some time deselection of items also. By collection evaluation we can overcome the limitations of other services.

Collection evaluation can be done in two ways:

- Collection oriented
- User-collection oriented

2.1.1 Collection oriented method takes the collection as a prime focus—whether the collection is according to the standards developed by professional body or according to standard bibliography written for certain type of libraries.

2.1.2 User-collection oriented approach is dependent on utility of resources in compliance with user's needs. Most of the time we use this approach to evaluate circulation, periodicals used and inter-library loan services.

With the help of appropriate methods collection can be evaluated, certain standards can be designed, pre-existing standards can be assessed and modified according to requirement.

2.2 Inter-Library Loans

When a library is not able to meet the demands of its users from its existing resources then it can use the other library's resources on inter-library loan basis. But if there is no particular procedure or standard for the service, the gains of such a service, will be mutilated. It is therefore, necessary to write down procedures and policy regarding inter-library loan services. Users should be kept informed about their

demand and period needed for the services. Efforts should be made to minimize the time taken in the process, so that in the case of non fulfilment user may not feel dissatisfied.

Setting standards will be useful to library in a number of ways. Primarily they enable the library to identify problems in the Inter library loan system, such as length of time. By identifying problems solutions can be designed and standards can be rewritten.

2.3 Database Search Services

Database search services constitute electronic information services provided by libraries these days. Search can be made by author, title, or source. Even full text search can be made through full text databases. CD-ROM, Internet, LAN, WAN facilities can be used for the said purpose.

Quality reference service or database search service depends on three factor, answer, process and delivery. The answer must be accurate, process must be efficient and timely and delivery or style in which information is communicated to users, must be positive and service oriented. The qualities of the librarians that are associated with reference services are divided into three categories—behavioral characteristics, knowledge and reference skills. Librarian is expected to advice the users on appropriateness of computer searches and alternative databases, inform new users about fee schedule, major research options and turnaround time. He should also brief users about Selective Dissemination Information Service.

3. PRE-REQUISITE AND GUIDELINES FOR ISO CERTIFICATION

Decision by the management to go in for ISO 9000 quality system first of all calls for preparation of necessary documentation to serve as a reference for working towards a common objective of implementing the system. Proper documentation is a pre-requistie for implementing quality system. The organisation may also need the services of a consultant, it will depend on resources and expertise available as well as cost. How the consultant is used, is upto the individual organisation. In addition to providing advice and guidance on how to intetpret and implement the requirements, the committee can be used to write the procedures and produce the quality manual. CRRI has

engaged Consultancy Development Center (CDC) as consultant for ISO 9000 QMS implementation.

3.1 Design of the Quality System Documentation

The quality policy of the organisation is to be framed by top management. The quality policy must reflect management's commitment to establish and maintain quality system to ensure meeting customer's stated and implied needs. The second step is to choose the appropriate standard *viz.* ISO 9001, ISO 9002 or ISO 9003, depending on the extent of activities desired to be covered by the quality system. Then, Quality Manual, Operating/System Procedures, Work Instructions are prepared. To prepare system procedures, areas of operations needing written work procedures are to be identified. The operating procedures would provide adequate and full information to ensure compliance with all relevant elements of QMS during the execution of specific activities. Operating procedures must be written by the person incharge of the activities as he/she is the person who understands best the particular activity. The operating/system procedures are confidential documents of the company and, therefore, not to be revealed to outsiders. In order to achieve uniformity in drafting of procedures, it is advisable to evolve a standard format which must be followed by all concerned.

Quality manual should reflect the approach of the organisation for compliance with quality system elements, the organisational structure, defined responsibilities and methodology of organising various activities without going into procedural details. The quality manual should contain limited details to the extent considered sufficient for a general understanding of the way in which the system would operate. Quality manual must provide answer to all the quality system elements with respect to the organisational support, envisaged brief methodology, policy guidelines and the system to be followed.

Work instructions are prepared on the lines similar to that of system procedure for individual work positions. These are normally written for/and by the individual operators in their own language using sketches and photographs to ensure complete understanding and compliance with the instructions.

Quality management includes strategic planning, allocation of resources and other systematic activities for quality such as planning, operation and evaluation.

Quality planning comprises total planning of library resources

and its operations from the users' perspective. Planning of resources should be in this way that perceptions of customers can be fulfilled. The only way to chalk out quality policy in library is to define its services, its procedures and its benefits to its users. All types of users should be taken into consideration, whether they are internal or external, this is possible with the involvement of library staff in public relations. They should note down about the customers and their requirements, whether library is able to fulfil their requirements or not, if yes, then to what extent. Are the services according to customer's expectations? If not, what are the hurdles in the way and which is the appropriate way to get rid of these hurdles? Are the sources enough to fulfil the requirements. Each and every staff member of the library should be involved in the quality planning, and motivated not to rely on someone else.

3.2 Certification

Certification is the procedure and action by a authorised body of determining, verifying and attesting in writing to the qualification of quality system in accordance with the appropriate ISO 9000 Standard. Registration is an act of being recorded as having achieved the ISO 9000.

The organisation which has established the quality system and also been operating it, needs to be verified and certified by an independent certification body to ensure that its contractual requirements match the users. For achieving the certificate the organisation has to apply to recognised certification body, which verifies, testifies the quality system. If it does comply with the standards, then the quality system certificate is issued to demanding organisation. The steps involved in registration are:

(*i*) Application for registration

(*ii*) Audit by certification agency

(*iii*) Certification

Quality system certification is done by national/international recognised and accredited certification bodies. Every country has one or more recognised and accredited bodies. In India BIS (Bureau of Indian Standards) is the agency which provides certification for quality. Process starts with the submission of an application on specified

application proforma, prescribed by BIS along with quality system document and registration fee.

(*a*) The filled up proforma provides basic information about the organisation, its location, product detail, type of certification needed, the existing standards applicable to organisation. BIS Form iii- Application Performa, BIS Form iv- supplementary questionnarie are the basic proforma to be filled in

(*b*) Quality System Documentation: This is quality manual, describing quality procedures being practiced in the organisation.

(*c*) Registration fee: Prescribed fee to be deposited at the time of registration.

The registration form is scrutinised by auditors of the certification body. If the information is not enough clarification is sought by the certification body.

3.2.1 Adequacy Audit

After the acceptance of the application, adequacy audit is done by accredation agency to determine the scope of audit, regulatory requirements of the system, quality system documentation, physical location of the applicant's organisation and other relevant information Thus, it is determined that how many auditors, days will be required, what expertise will be needed for assessment team for conducting quality system audit.

3.2.2 Compliance audit

A team of agency visits the organisation/institute to audit the quality system and to determine conformance to the documented procedures laid down to fulfil the requirements of relevant standard. The steps relating to assessment activities are opening meeting, assessment, closing meeting and presentation of assessment report. In opening meeting lead assessor introduces the assessment team with the organisation's top management and with its chief executive, tells them about the scope and objective of the assessment and the name of the departments to be assessed. Then assessment starts, after that closing meeting is held in which auditors discuss the conformities and nonconformities of the institute, supporting evidences are collected, nonconformities observed by the assessor are brought to the notice of the guide given by the host institute, After that assessment a report is

prepared and submitted to the chief executive of the applicant company duly signed by him. If there are non-conformities in the system then chief executive is responsible to get these corrected. If quality system complies with standard's requirements, the certificate is provided to the organisation/institution.

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Book Availability as a Performance Measure in Academic Libraries

SHALINI R. URS AND J. DOMINIC

ABSTRACT

Abailability in terms of the number of items found as a proportion of the total items sought, is an important measure of the performance of libraries. Availability studies measure the degree to which wanted items have been acquired by the library, the efficiency of readers in disovering them on the shelves. This paper describes the Book Availability study of the four university libraries based on the Kantor's method and compared with the similar studies abroad. The study reveal that there is no unusual availability problem in the university libraries of Tamilnadu.

1. INTRODUCTION

A library can serve its function adequately if it has a supply of good, reliable, uptodate books and makes them available at the time when the user needs them. Availability of suitable reading materials is one of the criteria of measuring library efficiency. The term availability refers to the probability that a given item or items are immediately available, that is, found on the shelf when the reader wants them. It becomes customary to judge the capability of a library; particularly an academic research library by its ability to deliver wanted documents promptly. The inability of the library to deliver the required items, not only frustrates the library users but also damages the library's credibility with its funding authorities. In order to maintain the standard and quality of the library service, the library must improve this capability. Here capability indicates the availability of resources.[1]

For quite a long time librarians have been preoccupied, even obsessed with, providing intellectual access to recorded information. This is reflected in the efforts devoted to the development of bibliographic information retrieval systems and the resultant explosion of bibliographic tools and services. The fact that intellectual access needs to be accompanied by physical access was almost overlooked. The problem of making library books physically available when wanted by library users is central to librarianship.[2]

Essentially, the Logistical problem of making books available to library users has received far less attention in the literature of librarianship than the discussion on intellectual access.[3]

In developing methodological tools for planning and managing library services, Orr *et at* provided the following functional classification of library services.[4]

(*i*) Providing documents;
(*ii*) Providing citations;
(*iii*) Providing answers;
(*iv*) Providing workspace and facilities;
(*v*) Providing instruction and consultations; and
(*vi*) Adjunct functions.

This outline covers the general functions that any user might reasonably expect a library to perform.

2. PERFORMANCE MEASURES IN ACADEMIC LIBRARIES

Lancaster provided a definition of 'performance measure' as a quantified statement used to evaluate and compare the performance of library in achieving its objectives. It should allow one to determine:[5]

– Whether there has been any change in performance;
– Whether the changes are in the desired direction;
– If so, to what extent,

It is also said that performance measurement is concerned with the achievement of objectives but it also refers to the ideas of effectiveness, decision-making, and resource allocation.

Rzasa and Baker present a number of measures suitable for academic libraries.[6] These include: Total number of users; total number of items used; number of reference questions and answers given (not

differentiating between information and directional inquiries); number of users studying in the library.

There are growing indications that academic libraries are reexaming some of the traditional roles of the university library. There seems to be greater emphasis on improving availability of resources and access to resources and less emphasis on acquisition. The need for better document delivery systems to handle large capacities will emerge as a major library issue.

3. BOOK AVAILABILITY AS A PERFORMANCE MEASURE

Availability, in the sense of the proportion of the total number of items sought by users that were found immediately, is an important measure of libraries' performance. It is one of the few measures becoming fairly standardised thanks to the efforts of Kantor and others.[7] While some writers have used 'availability' and 'satisfaction' as synonymous terms it may be better to reserve 'satisfaction' for a wider context. Satisfaction could be regarded as a more complex concept including the terms under which the reader can use the items found. These could include the length of the loan period, and low (or no) penalties for late return.

Availability studies measure the degree to which wanted known items have been acquired by the library, the efficiency of readers discovering locations via the catalogue and on the shelves. De Prospo reported results in a linear fashion following the steps taken by readers.[8] These steps may include, first, deciding whether to visit the library, determining whether the library held the item, and finally locating it on the shelves. Probabilities for each step can be calculated. The product of all the probabilities gives the overall availability rate.

Kantor's branching technique well illustrates this linear progression. From the total number of items requested are subtracted those not owned. This gives the probability of ownership. The lesser number is carried forward and checked to see which items are out on loan, thus giving the probability that items are not unavailable through being on loan. Subtracting those items on loan from the total of requested items owned gives a figure to carry forward to the next stage. This involves checking whether 'in-Library' processes, such as reserve lists, binding repair, processing etc, have removed items. Finally the remaining items are subject to the users' ability to discover

these on the shelves. The product of these probabilities gives the overall availability, which is also identical to the total found divided by the total originally sought. Several researchers have used and reported studies using this method.[9,10,11,12,13]

Mansbridge studied over 40 availability studies. He found the median sample size as 437 items and the average availability rate as 61 per cent.[14] he concludes that, over 50 years, there had been little evolution of this type of study until De prospo applied probability and Kantor used the branching technique. The majority of the studies had been carried out in academic libraries.

Hindle, using a mathematical model, suggests that (theoretically) an availability rate of near 70 per cent could be maintained. Goehlert points out the limitations of the technique.[15]

4. BOOK AVAILABILITY: KANTOR'S METHOD

Kantor has proposed the technique for determining the availability of items in a circulation collection.[18] There is only one reason for library users not finding the titles they seek namely that titles are on circulation. If we denote the number of enquiry's as W, the number of dissatisfactions, caused by circulation as DC, and the number of user satisfaction as S

$$W = S + DC$$

For example, if W = 100 and DC = 20, then S = 80. We can also say that PC, the probability that a book is not circulating, is 80 per cent. Even if the book is not circulating, the user may not necessarily find it. Suppose, that 10 out of the 80 items are not in circulation but have been misshelved (Dissatisfaction caused by library performance); then, the number of satisfactions is reduced to 70. However, performance at the level of circulation remains 80 per cent. To describe the additional dissatisfaction, a second performance factor PL, which measures the probability of a book, which is not in circulation and is also correctly shelved, is not found by the user. Thus PL = 70/80 = 87.5 per cent. Of course, it can also define the fraction as all books sought, which are correctly shelved, which is 70 per cent.

Suppose, for some reason (a change in circulation policy), on an average 12 out of 100 books are circulating. Then of each 100 books, there are now 88, which are in the library. Presumably the eight

additional books are no easier or harder to shelve than the other 80, and so (on an average) 7.8 x 8 = 7 of them will be in the correct place, while one will be out of place. Thus, the second performance factor becomes 77/88 = 7/8, which is the same. Of course, if we were comparing the number of satisfactions to the number of enquiries we would now have 77 per cent instead of 70 per cent. The performance measures are denoted by PA, PC, PL and PU. They are calculated using the branching diagram as below.

The formula is taken from Kantor (Paul. B) and it derives as follows:

W	PA DA (NOT ACQUIRED)
V	PC DC (CIRCULATION)
U	PL DL (LIBRARY ERROR)
T	PU DU (USER ERROR)
S	

A graphic representation of the technique

W = the total number of searches

S = total found.

Categories of dissatisfaction or failures

DA = failures due to non acquisition
DC = failure due to circulation
DL = failure due to library error
DU = failure due to user error

The formula, $T = S = DU$

$U = T + DL$

$V = U + DC$

$W = V + DA$

Each node on the branching diagram is a category of failure and the order of these nodes is important. The evaluation begins with DA

and moves down to DU. For a desired item to be located it is necessary that it be acquired (DA-acquisition failure); next, it must be in the library and not in use (DC-circulation failure). It then must be on the shelf at its appropriate place (DL-Library failure) and, finally, if the item has achieved all of the above, it still must be found by user (DU-user failure). The branching diagram thus represents a four-stage filter and number of searched items, which are not found due to each failure stage. The essential performance measure that is expected is the ability of the library to overcome the effects of each stage of filter and to consider as the probability that a desired item passes through that stage. This probability measure is arrived at by dividing the number of items passing through that stage.

Thus the performance factors are:

PA (Performance of the Acquisition component) = V/W,
PC (Performance of the Circulation component) = U/V,
PL (Performance of the Library Component) = T/V,
PU (Performance of the User component) = S/T

that is

PA = V/W,
PC = U/V,
PL = T/V,
PU = S/T

The major headings for the sub-categories of the books, which the user is unable to find, are:

C1 = Not owned by the library
C2 = Incorrect call number
C3 = Book located in a special area identified on catalogue card
C4 = Book properly shelved
C5 = Book misshelved
C6 = Book recently used or in use in library
C7 = Book in pre-shelving
C8 = Book located in (or listed in) an area not identified on card catalogue
C9 = Book circulating
C10 = Other

The categories C1 - C10 were assigned to the four performance categories in the following fashion:

DA = C1
DU = C2 + C3 + C4
DL = C5 + C7 + C8 + C10
DC = C6 + C9

The investigator undertook this study to evaluate the Book Availability performance in the following four university libraries in Tamil Nadu. 1. Bharathiar University, 2. Tamilnadu Agricultural University, 3. Bharathidasan University, 4. Anna University. The data were collected and the results were analysed.

Library	*w*	*S*	*PA*	*PC*	*PL*	*PU*	*PS*
BHU	870	460	$\frac{660}{870}$ =	$\frac{550}{660}$ =	$\frac{511}{550}$ =	$\frac{460}{511}$ =	0.52
			0.7586 (75.86%)	0.8333 (83.33%)	0.9290 (92.90%)	0.9001 (90.01%)	(52%)
THU	1150	766	$\frac{1078}{1150}$ =	$\frac{962}{1078}$ +	$\frac{865}{962}$ =	$\frac{766}{865}$ =	0.64
			0.93 (93%)	0.89 (89%)	0.89 (.89%)	0.88 (88%)	(64%)
BNU	957	544	$\frac{751}{957}$ =	$\frac{616}{751}$ =	$\frac{594}{616}$ =	$\frac{544}{594}$ =	0.55
			0.78 (78%)	0.82 (82%)	0.96 (96%)	0.91 (91%)	(55%)
ANU	1254		$\frac{1195}{1254}$ =	$\frac{1049}{1254}$ =	$\frac{956}{1049}$ =	$\frac{855}{956}$ +	0.66
			0.95 (95%)	0.87 (87%)	0.91 (91%)	0.89 (89%)	(66%)

Ps = PA X PC X PL X PU

The above results indicate that there is fifty to sixty per cent chance of a user finding the book that he/she wants at the time of searching for it.

5. DISCUSSION

The present study reflects that little less than half of the known item searches result in failure. The failures are more or less evenly distributed over the acquisition barrier, Circulation, Library and User barriers.

Kantor's branching technique is a powerful tool which permits the analysis of specific areas—user frustration in a library. A number of studies have been done using this technique so that it is not possible to compare a library's performance in a category with the performance of other libraries. It is also a useful task for a library to measure its progress over a period of time using this technique. Following are some of the book availability studies carried out using Kantor's branching techniques.

Based on the above results, we may infer that there are no unusual availability problems in the university libraries of Tamilnadu. The Tamilnadu Agricultural University and Anna University score slightly better than some of the universities abroad. The Bharathiar and Bharathidasan University scores are little below most of the other universities. These results suggest that the book availability situation in the university libraries under study is neither better nor worse than those of the average academic libraries.

The results point out that a fairly high degree of unavailability is attributable to library barrier. The study revealed, for example, that catalogue entires for many item had not been withdrawn despite having been declared missing. Low acquisition performance is another area that needs probing and indicates the need for better collection development policies. Another conspicuous finding in the four university libraries is related to the poor performance of users. The items could not be located as the users could not record call numbers properly and many a time were unable to locate them on the shelves. This points to a need for effective user education programmes, as well as assistance from library staff. The circulation score may be adequately improved by following a variable loan policy of short term, say one week rather than two weeks for more popular titles or even developing a programme in automated manner by increasing the number of duplicate copies for books that are in heavy demand. The availability factor is closely related to the level of demand, number of copies and the loan period. Academic libraries especially need to evolve a policy

BOOK AVAILABILITY STUDIES CONDUCTED ABROAD

Library	*Performance*					
	Year	*PA-Acquisition*	*PC-circulation*	*PL-Library*	*PU-Users*	*PS-BA%*
University of Sussex	1995	24.07	40.60	15.10	11.6	63.60
Univerity of Sussex	1995	84.47	79.00	71.7	57.00	61.90
Alvernia College	1994	94.00	93.00	81.00	94.00	61.00
Punjab University	1993	83.60	91.80	65.70	82.40	41.33
Cleveland Health Science	1990	25.00	83.00	49.00	47.00	59.00
Liverpool Poly-technic	1987	92.00	88.00	95.00	85.00	69.00
William Paterson	1987	90.00	91.00	94.00	93.00	49.00
McHenry Library University of California	1986	90.10	81.90	91.00	96.70	61.00
University of Ilinois	1983	98.04	93.57	94.08	92.19	71.11
Indian University	1978	59.00	93.00	57.00	38.00	55.00
University of Minnesota	1978	94.00	90.00	86.00	88.00	63.00
San Jose State Univerity	1978	91.70	89.00	94.00	88.20	58.90
Case Westetn Reserve Univerity	1976	90.00	91.00	84.00	94.00	65.05
University of Lancaster	1975	97.00	78.00	89.00	79.00	53.00

of variable loans coupled with duplicate copies for books based on studies of use of library material.

Though it seems obvious that buying additional copies will improve availability, the effect of an additional copy varies with the demand of the item. If a particular book is off the shelf for one half

of the year, we can say its availability rate is 0.5. Adding a second copy will improve availability, but two copies are not twice as good as one.[3] The effect of varying the number of duplicate copies on the availability of books at different levels of popularity is as follows—with 98 demands per year for a particular title, two copies will produce an availability rate of 0.5; three copies will improve availability to 0.7; and four copies will enhance it to 0.8.

The effect of length of loan period on availability is also very significant, but less understood and rarely considered. Reducing the length of loan period from four weeks to two week greatly increases the probability that any book will be available on the shelf when looked for by a user. Infact, cuting the length of the period to half has roughly the same effect on availability as buying a second copy.

5.1 Limitation of the Book Availability Measures

If the satisfaction level is higher, use of the library may increase substantially because of higher expectations of success. The greatly increased demand, however increases competition for the library's resources, and brings the satisfaction level lower.

5.2 Higher Acquisition Ratios are not Truly Indicative

Higher acquisition score is probably due to the fact that the searches are mainly for those books about which the users are more aware that the library owns them or at least confidently expect them to be found in the library. In a university library a significant proportion of search is by students, whose requests are mainly based on book lists provided by the faculty. Faculty members normally include books, known to be available in the library, in their lists. Faculty and research scholars have an intimate knowledge of the collection.

6. CONCLUSION

The factors that determine whether or not a user can obtain a needed item during a visit to a library are divided into two broad categories:

(*i*) Can the user find an entry for the item in the catalogue?

(*ii*) Given that the user finds an entry, can he/she find the item itself?

There are many factors which affect the first question. The underlying factors here have been to do with the library's selection criteria,

librarian's knowledge of user needs, users' participation in book recommendation, the adequacy of the budget and other efficiency factors like library's acquisition systems, processes and procedures.

Several other factors influence whether or not a library user can find an entry for an item in the catalogue, given that the item is actually present. Some of these relate to users' characteristics like their intelligence, perseverance, familiarity etc. Some of the factors relate to the quality of the catalogue and guidance and instructions.

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ISO 9000 vs. TQM in LIS Context

R.K. VERMA

ABSTRACT

The paper presents comparative features of ISO 9000 series of standards and Total Quality Management. Points out that for organisations conforming to ISO 9000 standards for quality system easier, though not essential, it is to adopt TQM in right perspective. It is also not important to first to go for ISO 9000 and then to the path of TQM. Cautions that by only adopting formal quality management approach we may be heading towards a rat race and 'class distinction' The paper concludes that the achievement of quality is not a target but a journey towards a destination which itself is to be rediscovered continuously so as to reach near perfection stage.

1. INTRODUCTION

We have been discussing about quality in Library and Information Services (LIS) sector for quite a long time. For years the term quality was taken as an entity related to the resources, range and richness of the library stock. However, in the context of libraries, particularly special libraries, the viewpoint has changed from resourcefulness to satisfaction of the user demands. Recently, the emergence of two quality improvement and management approaches *viz.* ISO 9000 series of standards and Total Quality Management (TQM) as a testimony to quality of the product and service by the organisation, has created profound interest in commercial sector. However, in LIS we are to go a long way to achieve the same. There are, at present, very few organisations in India in LIS sector that are ISO 9000 certified

e.g. SAIL, Ranchi, IIT Chennai, BHEL Delhi, M.N. Dastur & Co. Calcutta, and CFRI Dhanbad. There may be more in the process of being certified and several others planning to go for this quality stamp. Interestingly in some of the papers originating from these organisations either a casual mention of ISO 9000[1] or TQM[2] is made while discussing about TQM and ISO 9000 without elaborating much on their relevance and relationship with each other. Among various factors, the lack of clear understanding and interpretation of concept, its scope and implementation seems to have contributed this stage which has also been mentioned in a paper earlier by Verma along with some issues and implications.[3] So an attempt has been made in this paper to review the role of both the approaches of quality systems viz. conformance to ISO 9000 standards and Total quality Management (TQM). The objective here is two fold: first, to popularise the concept, scope and implementation aspects of the two approaches which will create further interest among LIS professionals and pave the way for increase in the number of organisations towards the path of quality improvement. Secondly, to lead to a better understanding for developing future strategies by the planners for quality improvement in LIS sector in India.

2. QUALITY AS ELUSIVE ENTITY

Both the ISO 9000 standards and TQM as management standards deal with quality as the main subject. So, it would be appropriate to comment first on the concept and scope of the same. Quality is generally equated with the term 'excellence' which is a subjective matter. ISO 8420 defines it as "the totality of features and characteristics of a product, process or service that bear on its ability stated or implied needs" which means "fitness for use". This prevailing definition is currently replaced with the consideration, which takes into account the needs of the customer/user/clientele.

2.1 Traditional Concept of Quality

2.1.1 Quality Approaches

There are basically three quality approaches *viz.* user-based, product-based, and process-based approach, with relative merits and demerits. It is very difficult to apply one approach to a quality problem case

in isolation. In fact all approaches can coexist. For example, the staff responsible for preparing bibliographic records without a direct contact with users probably will find process-based approach very useful, whereas frontline personnel may adopt a user-based approach in terms of integrating the multiple views into a consistent quality strategy. In the design phase, a user-based approach to identify the features needed by the users may be employed, but at a later stage, a product-based approach can help to ensure that equipment and methods provide specified products and services.

2.1.2 Quality Criteria

Certain quality criteria are essential for translating policies and goals into measurable and precise requirements and internal quality standards. The same are effectively applied to the activities as performance and user satisfaction measurement. Measurement of general user satisfaction may not be useful and valuable to librarians; it is necessary to gather data on how users evaluate specific aspects of the database service. However, there will be a risk that lists of criteria are biased, focusing on characteristics and features reflecting professional values that may not match customer preferences. This implies that there should be a concise and exhaustive framework and list of user-based quality criteria. There have been several conceptual frameworks of quality criteria but only those parameters which give relative advantages and disadvantages pertaining to the product and service aspects are: Performance, Features, Reliability, Durability, Conformance, Serviceability, and Perceived quality.

2.2 Current Concept of Quality

2.2.1 Quality as Dynamic Entity

Quality is not an absolute concept linked to universal and eternal values, as has been maintained in the debate about quality and the selection of literature by libraries. The current perception of quality relates it with any activity changing with time, environment, customer reaction and other factors.

2.2.2 Quality as Process

Quality is a continuous process that can be broken anywhere in the system of supply and customer requirements. By letting every person

know how his/her activities help to fulfill customer requirements, the organisation can motivate its employees and suppliers to provide quality consistently. The quality process, which involves a proper investigation of the inputs and outputs of the organisation, helps in determining the action to be taken for its (quality) improvement.

2.2.3 Quality as Service

The statement that quality is concerned only with objects is not true. In fact it is a crucial factor influencing customer's decision to become a regular customer. Even manufacturing companies now realise the necessity of quality of service to retain customers.

3. ISO 9000 (QUALITY ASSURANCE)

According to ISO 8402 Quality Glossary, quality assurance is defined as "all the planned and systematic activities which are required to provide adequate confidence that a product or service will fulfill specified requirements for quality". It shows that quality is a result of objective and planned effort. The ISO 9000 series presupposes that quality can be defined, and that achievable quality targets can be established. Basically the standard was designed to cover the management process of organisations involved in manufacturing and production and that is why many service sector organisations including those in LIS sector find it difficult to interpret the same. First and foremost point here is that ISO 9000 series standardises only the requirements of the quality system in terms of goals specified by an individual LIS unit It implies that a particular LIS organisation may select completely different quality systems also. Though the quality is assured, as is claimed, by following ISO 9000 series of standards, it does not come automatically.[4]

There are some pitfalls, which may be referred to as words of caution. In the context of ISO 9000, these are described under the heads: Scope of products and services; Analysis of processes; Procedures and working instructions, Criteria for quality policy and Objectives; Selection of standard; and Options for choosing elements.

3.1 Scope of Products and Services

The starting point at the planning stage is to draw a list of the products and services for the purpose of quality improvement and certification

for ISO 9000. The ISO 9000 series does not set limits on the criteria for the organisation to employ. It implies that there is flexibility in choosing the particular product or service at the sole discretion and convenience of the LIS unit. However, even if the legitimate selection is made based on well defined and specified criteria such as demand, profitability, fee-based services, there is every possibility of excluding any item which is not up to the mark. For example a newly computerised LIS unit may include current awareness service but exclude selective dissemination of information. Similarly it may cover internal database design and operation and eliminate external database searching.

3.2 Analysis of Processes

The main objective of analysing the processes is to examine the details of the procedures and identify the factors, which may contribute to quality in negative or positive sense. ISO 9000 does not actually require the existing procedures to be re-evaluated. This implies that it would be sufficient for the LIS unit to make a note in the existing procedures and routines, with the condition that those minimum requirements of the ISO standard, which have been selected, are satisfied. Further, ISO 9000 series gives the organisation a freedom to analyse its processes as it sees fit. Alternatively, ISO 9000 provides that one can make extensive use of experts and specialists. However, there is no dearth of examples, which show that creativity of individual members of staff is effectively utilised. Thus it is beneficial for the LIS unit to promote teamwork and active involvement of all the staff involved.

3.3 Procedures and Working Instructions

The formulation of set procedures and working instructions is not an easy job, as it seems to be at the first instance, since highly detailed technical directions are to be included in the work instructions. In this context, it becomes very essential to see which of the relevant ISO requirements are being satisfied and what is the connection between the quality objective and the content of the procedure. On the other hand it is held that there is no necessity of covering all quality assurance aspects in procedures and working instructions. It is also allowed to substitute training requirements for detailed procedures and working instructions where appropriate. This much flexibility, it is

feared, may leave behind lot of inconsistencies and gaps in theory and practice.

3.4 Selection of Standard

Out of three standards *viz.* ISO 9001, ISO 9002, & ISO 9003 in ISO 9000 series the most appropriate to a modern LIS unit is ISO 9001, since it covers requirements for the product development and design in the broadest sense. ISO 9002 omits the component of development and design. The British guide to ISO 9000, however, recommends 9002 in general with the rider that in case of significant design element in their services, ISO 9001 may be considered. Though the clientele is not much concerned about the specific standard as mentioned above, the choice may lead to different categories of LIS units at various levels of quality assurance, since there is no compulsion of either changing or updating the choice of standard.

3.5 Criteria for Quality Policy and Objectives

ISO 9000 series grants freedom to LIS in terms of methods of defining and specifying their quality policy and objectives. For example, it does not require the policy and objective to be based on use or user studies, interest analysis or any other rigorous method. More interestingly, the standard does not prescribe the way in which the individual unit meets its requirements for quality policy objectives in practice.

3.6 Options for Choosing Elements

There are 20 elements (requirements)[5] in ISO 9001. It is not necessary to cover all the elements. The detailed description is beyond the scope of this paper. However a brief description of the same with main contents is given in Table 1 for reference. A glance at these will lead to the fact that all specifications are not necessary or obligatory for an LIS unit. While some are obligatory (1,2,6,13,14,17,20), others (7,19) are optional. Some are easier to apply than others (15,16). Some are less relevant (11), a few are already in place (15,16,17) and others need great deal of thought, consideration and interpretation (5,6,12, 14,20). So, the criteria for selection will depend upon ease of application, relevance (or suitability?) for the service, and necessity or obligation. It implies there can be various classes of LIS units at varying degrees of compliance with standard requirements creating further confusion not only in the products and services but also the very

concept and scope of quality itself taking (dis) advantage of its being dynamic in nature.

Table 1: Elements (Requirements) of ISO 9000 with Main contents

S. No.	*ISO 9000 Element (Requirement)*	*Main Contents*
1.	Management Responsibility	Quality management consultant to provide resources for implementation of various tasks
2.	Quality system	Formulation of procedures and instructions. Quality Planning
3.	Contract review	Agreement or offer in any form for providing service
4.	Design Control	Design input as basis for development process. Establish and maintain procedures to control and verify design of product. Design output to meet Design input requirements
5.	Document and Data control	Critical evaluation of management of document and data
6.	Purchasing	Steps for selecting suppliers, reviewing their capabilities, and specifying purchases
7.	Control of customer supplied products	Relevant only when customer supplies material for inclusion in report or to ensure confidence in material. Control in respect of sub-contract
8.	Product identification and traceability	Awareness to trace the source in case of problems with interpretation of contents
9.	Process control	To identify and plan the process having direct impact on quality. Quality assurance by managing at production stage of service

S. No.	*ISO 9000 Element (Requirement)*	*Main contents*
10.	Inspection and testing	Inspection and testing on receipt, during processing, and on completion of task and recording of inspections and tests
11.	Control of inspection measuring and test equipment	Use of equipment to measure quality
12.	Inspection and test status	Setting up procedures for possibility of checking at any time whether the service has been inspected and by whom
13.	Control of nonconforming products	Identification of nonconforming product. Corrective action for no conformation reporting
14.	Corrective and preventive action	Incorporates procedures for corrective and preventive actions by combining nonconformance report and idea report
15.	Handling, storage, packaging	Security aspects for storage. Protection of computer readable media during consignment. Safety systems in the form of controlled access to computer based information systems
16.	Control of quality records	Identification of features essential to be recorded, *e.g.* easy readability, retrievability, and preservation. Rules to be laid down for the period for retaining of records
17.	Internal quality audits	Whether systems are used as described and agreed and operating effectively
18.	Training	Identification of training needs to achieve competence taking it

Contd.

S. No.	*ISO 9000 Element (Requirement)*	*Main contents*
		as essential part of services offered
19.	Servicing	Developing procedures for implementing and verification that a service contract has been conformed to specified requirement
20.	Statistical technique	Identify the need for statistical techniques which are necessary to establish, manage, and verify processing capabilities and product characteristics

4. TOTAL QUALITY MANAGEMENT

Though the ISO 9000 certification assures quality and inspires the confidence in the minds of customer but one needs to live up to it by using the systems and procedures to become customer focused in each and every activity starting from creation of product to after-sale service. Structurally there are six elements of TQM[6] which are elaborated below:

4.1 Quality is Customer Defined

Quality is defined in terms of customer's perceptions or as the gap between expectations and perceptions. Such customer focus requires not only an attention to internal processes, but also an awareness of the external marketplace. Only a match between the requirements of the marketplace and the internal processes and operations will lead to a quality service.

4.2 Internal and External Customers

The only way to ensure that the organisation has a focus on customers that applies equally on all departments and teams, including those not in direct contact with the external customer, is to encourage each employee to identify the users to whom they provide service and to

view those people as their internal customers. In this way the customer orientation can permeate the organisation.

4.3 Employee Involvement

Employee involvement means that each individual must take the initiative in quality assurance and not rely upon someone else. In order to achieve this, the organisation needs a culture, which encourages employees to understand that they contribute equally and succeed through co-operation and support.

4.4 Error Free Processes

The focus of TQM is to eliminate waste, reduce costs and achieve error-free processes. The traditional approach to TQM, which developed in a manufacturing environment, was a strong focus on process quality control.

4.5 Performance Measurement

Performance measurement needs to be based upon timely measures of and feedback on performance through superior quality information systems.

4.6 Continuous Improvement

Continuous improvement must be seen as the responsibility of everyone in the organisation. To develop this a focus on training, education, communication, recognition of achievements and teamwork is often seen as appropriate.

5. DISCUSSION

Though the two quality system management approaches are primarily concerned with achieving quality, there is confusion as to which one (or both) of these to follow? To put it in other words is it essential to go for ISO 9000 certification even when one strives for TQM? As has rightly been quoted by Chakraborty "On receiving the certification how many of the quality improvement barriers, which persisted and haunted our work organisations for years, would really go away".[4] It implies that by getting certification there is no guarantee of automatically providing the quality. There are certain notional differences in concept, scope and implementation levels of both the approaches.

Table 2. points out some of the differences at a glance. The questions still unanswered are: Are these two approaches complimentary or supplementary or both? By adopting formal quality system management approaches are we not heading towards differentiation not only in range of products and services but also in the concept and scope of quality itself? This may refer to degree or level of quality achieved. Also the process of quality improvement may be linked with quality levels. But what would be the measurement criteria for achieving cent per cent level, will it remain the difficult-to-reach perfection level, if not impossible? In this context a reference is hereby made to the Indian standard,[7] which defines quality level "as a general indication of the extent of departure from the ideal, usually a numerical value indicating either the degrees of conformity or the degree of non-conformity". Further the quality level is a term used in a comparative sense.

Table 2: Comparative features of ISO 9000 and TQM

Quality system conforming to ISO 9000 standards	*Quality system through TQM*
1. Represents series of standards for requirements of the quality system designed by the organisation and is quality system oriented	1. Represents all techniques and methods applicable as quality management and is management system oriented
2. Quality assurance is through standardisation of requirements and is process oriented	2. Quality assurance is through philosophical way and is culture oriented
3. Has 20 fixed elements as requirements for quality system	3. Has 6 elements (not fixed) as management system
4. More explicit contents for manufacturing and production organisations	4. Explicit for both product and service oriented organisations

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Quality system conforming to ISO 9000 standards	*Quality system through TQM*
5. A formal quality system technique	5. An informal way of achieving quality. May or may not follow formal quality system techniques
6. Has three stages of its life cycle *viz.* preparatory, processing and certification	6. Has 4 stages of its eternal life *viz.* identification & preparation; management understanding & commitment; scheme for improvement; and new initiative, new target, and critical examination
7. Provision of reviewing of system procedures from time to time	7. Believes in doing things right the first time and every time. No formal reviewing
8. Involves significant cost for formal certification which may or may not be compensated in due course by eliminating hidden cost of rework, wastage and losing potential customers	8. Does not involve separate cost as input, though a marginal cost may help in maintaining a particular level of quality
9. Leads to uplifting of morale of employees	9. Morale boosting is automatically linked with the basic philosophy of enjoyment in work
10. Customer orientation is implicit	10. Customer orientation is explicit
11. Implementation level is more formal.	11. Implementation may or may not be formal.

ISO 9000 lacks self-sustenance despite its rigorous system of formal quality audit. It has a tendency of binding to certain predetermined procedures, which have been documented earlier and have less scope for offering any flexibility and innovation. Also in actual practice there are certain gaps, which are easily identified such as financial aspects of management, the issues of research and development needs in quality assurance standards. The context here is not the continuous improvement but compliance to the self designed standards. It however ensures customer confidence and enjoys their trust. It is more a means rather than the end in quality improvement process. The element of continuity and near perfection forces one to view the problem in wider perspective and scope, which is best, served by following TQM approach. There is no scope of misinterpreting the TQM since it covers all the management techniques for survival of six basic elements described above and as a result has greater flexibility and innovation. So we see that there are differences between the two approaches with regard to three aspects *viz.* concept, scope and implementation. Though there may be very little difference in the conceptual level as both are management approaches for quality systems, yet in scope and implementation the approaches are different. From the above discussion one should not braw the impression that conforming to ISO 9000 for quality system is not beneficial. In this context a reference is made of two papers,[8, 9] which highlights the benefits while implementing the same. Rather it may be easier for organisations that are already certified for ISO 9000 to switch over and adopt TQM in the right perspective. However, adherence to this with conservative approach to following the already decided standards time and again may or may not lead always to the path of TQM. The need of the hour is to take initiative for building a quality system oriented culture which would be system driven requiring, of course, the continuous relentless efforts to improve the quality. Thus the achievement of quality is not a target but a journey towards a destination which itself is to be rediscovered continuously so as to reach near perfection stage.

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Standards for Qualitative Development of Library Activities

K. SUGATHRI DEVI

ABSTRACT

The role played by standards in the evaluation and assessment of quality improvement of university libraries is a long recognised aspect. The report of the UGC (India) Library Committee (1957) published in 1965 under the Chairmanship of Dr. S.R. Ranganathan is outdated. Faced with the lack of set of standards, the performance evaluation of the university libraries in India became a difficult task. Hence, an attempt has been made in this article to propose model set of standards in the areas like objectives, physical facilities, collection development etc.

1. INTRODUCTION

The role played by standards in the evaluation and analysis of quality improvement of university libraries is a long recognised aspect. The Government of India, recognising the importance of standards, appointed a committee in 1957 itself. The report of the same was reviewed by UGC and published in 1975.

A number of eminent scholars and professionals, LIS Associations and UGC have made significant contributions on the importance of maintaining a standards; UGC has appointed standing committee on academic libraries.

The 1965 standards are outdated and not suitable for the contemporary information environment. Realizing this fact, the UGC has appointed a National Review Committee for Academic libraries in 1996. But the report of the committee is still awaited.

Faced with the absence of any clear cut set of standards, the performance evaluation of the university libraries in India became a

difficult task, which demands immediate attention of the profession. Hence, an attempt has been made in this article to propose a model set of standards in the areas like objectives, physical facilities, collection development, services, user studies, budget and lastly on computerisation and networking of university libraries.

1.1 What are Standards?

Standards can be described as instructions for doing something uniformly. Standardisation may be defined as a pattern of an ideal, a model procedure, a measure for appraisal. According to webster's New Word Dictionary, it is something established for user as rule or basis of comparison in measuring or judging capacity, quality context, extent, value, quality etc.

1.2 Why are Standards needed?

Standardisation leads to economy in time, space, effort, materials, manpower and money.

Standards facilitate and act as a tool for international exchange/ transfer of information and experience. For example, in cataloguing, the instructions or standards are for a uniform way of describing a book or other object and for uniform way of retrieving the descriptive record.

- Standards help to act as a tool of measurement and control of the quality of the products.
- Implementing Total Quality Management (TQM) techniques for library services helps to evaluate the function of a library.
- Innovation is absolutely essential in any process and the standards help in innovation.
- The repetitive nature of jobs can be standardised and thus result in manpower saving.

2. HISTORICAL BACKGROUND

The work in the area of standardisation in library and information science is believed to have been initiated as early as 1870 in the field of materials used in the libraries.[1] However the work on the intellectual side of the subject was recognised soon after the world war-II. The work at the international level was carried out by the International

Standards Organisation (ISO) and TC 46 is responsible for standards in this area. But the scope of the international standards has been limited to European languages.

2.1 Indian Scene

In India the importance of standardisation was recognised soon after the establishment of the Indian Standards Institution (ISI) in 1947. A sectional committee (EC2) was appointed, under the chairmanship of Dr S.R. Ranganathan to formulate standards on documentation. The committee started its work in 1948 and was the first in the whole world to produce a standard for the 'Author statement'. This committee has finalised standards in the areas of bibliographical references, books and periodicals, indexes and abstracts, cataloguing, classification, building, furniture and fittings, microfilms etc. besides revising many of them.

The University Grants Commission (UGC) appointed in 1957 a committee under the chairmanship of the distinguished librarian-scholar Dr S.R. Rangandhan to advise the U.G.C. about development of libraries and their organisation. The committee report was published in 1965 under the title 'University and College Libraries".[2] The committee recommended that the grants given by the U.G.C. to a university library should be calculated on the basis of Rs 200 per teacher and Rs 15 per student and that these figures should be revised periodically according to changes in the cost of books and periodicals. In the case of a university not more than 5 years old, an additional grant of Rs 3,00,000/- was recommended to build up the initial stock. it was also recommended that the academic qualifications of the library staff and their status and salaries should be equal to those of the professors, readers, and lecturers. Quantitative standards, were given for library staff. Standards prepared by a committee of the Indian Standards Institution (ISI) were recommended for library buildings and equipment.

3. NATIONAL POLICY ON LIBRARY AND INFORMATION SYSTEM

The Chattopadhya Committee[3] on National Policy on Libraries, Information Systems and Services had in its report recognised the need for formulating standards for different areas such as staffing pattern,

building and equipment, tools, techniques, hardware and software etc., and for that purpose recommended that necessary steps should be taken to formulate guidelines for different types of libraries and information centres.

As the recommendations of the U.G.C. Library Review Committee of 1965 have become outdated, in recent efforts U.G.C. constituted a National Review Committee, 1996[4] for university and college libraries in Higher Education to monitor and evaluate financial assistance provided to the university and college libraries during VIIIth plan period. The objective was also to find out the methods to create effective library services in the light of modern technological advancements. The U.G.C. has appointed Professor M.K.R. Naidu as the Chairman. Prof. P.N. Kaula, Sri Pramod Kumar and others are the members.

The committee has been given terms of references on (*i*) revising the U.G.C. staff formula, (*ii*) quality and relevance of books, journals and other documents purchased/obtained by the library (*iii*) feedback on the relevance of the curricular from the departments of L.I.S. keeping in view the implementation of UGC CDC report, 1993 (*iv*) to suggest resource mobilisation and rationalisation of library expenses. and (*v*) to develop norms and performance indicators for libraries. However, the report of the committee is still awaited.

Library profession of the modern age is entering into a multifaceted new era comprising library science, information science, marketing, telecommunication, computer applications etc. The expectations from the library professionals are more than what existed earlier. It is therefore essential that the basic guidelines, functions and procedures should be worked out at national level to achieve the standards of service.

4. 49TH IFLA GENERAL CONFERENCE, 1983

The statement on standars for university libraries has been prepared by the IFLA section of university libraries and other general research libraries. The statement grew out of the 1981 IFLA meeting in Leipzig, during which the standing committee generated considerable interest in the development of an IFLA statement on university library standards, particularly among the libraries from Third World countries. The statement was prepared under the chairmanship of Ms Beverly P. Lynch, University Librarian, University of Illinois at Chicago.

The statement on standards for university libraries is written in the context of IFLA's dedication to the right of the university to fulfil purposes for which it was founded and to the rights of the faculty and students to teach, learn, investigate, study and publish freely. It is within this context that the university library is evaluated and for which guidence is offered.

From country to country, there is general agreement on the elements to be included in a statement of library standards against which performance is to be measured. With respect to university libraries these elements are the most common:

(*a*) The size of the book collection and the nature of the library's resources.

(*b*) The percentage of the institution's educational and general budget to be used for libraries.

(*c*) The physical facilities which include library building, seating capacity and other segments.

(*d*) The size and nature of the staff.

(*e*) Statements regarding the library's administration.

(*f*) The services offered by the library.

Most statements of standards also include statements about the library committee, the library hours, networks and inter-library co-operation, non-print resources and library orientation.

The problems confronting any development of standards for library performance persist:

- On what basis should the standards rest, professional judgement or some empirical research, and if research, what kind?
- Should quantitative standards be set at minimal or optimal levels of adequacy and how does the intent get interpreted?
- Can the statement include input and output measure?
- How is the diversity of libraries, to which the standards are addressed, handled?

And there are other statements relating to definitions and enforcement. Many activities relating to the development of library standards would profit from the adoption of standard definitions such as those found in the ISO standards 2789, Information and Documentation—International Library statistics.

The standards are intended to help members of the library and university administration responsible for determining priorities and evaluating performance to optimise the performance of the library in terms of the mission of the university. While standards are needed, they cannot be stated as absolutes applicable equally to all universities and be useful.

5. PROPOSED SET OF STANDARDS

The standards spell out the role of the university library within the context of the institution's information policies and academic goals. The mission of the university is to provide information services in support of the teaching, research and public service missions of the university.

5.1 Setting Goals and Objectives

To determine the appropriate goals for a university library representative bodies should engage in a continuing dialogue. The participants should include representatives from (*i*) university and library administration (*ii*) faculty (*iii*) library staff (*iv*) students (*v*) state or other governmental units associated with the institution.

5.2 Budgetary Support and Source

The library consists of a combination of three resources: people, collections and buildings. These resources are paid from a budget. They need to be in correct proportion to one another to meet the service goals of the library.

The library involves a major capital investment. As such, it requires ongoing annual investment to retain its value, the sources of funding vary greatly, in accordance with the nature of parent institution. The method chosen should make it possible for the library to operate without undue constraint.

5.2.1 Capital Expenditure

It is customary to distinguish and segregate major capital expenditures, such as new buildings, renovation or the installation of automated system from annual budget allocations. Added resources and services are needed to keep the facilities up-to-date.

5.2.2. Operating Budget

The operating budget of the the library must be appropriate to the mission of the library within the university and sufficient to sustain all operations, including the maintenance of automated systems.

5.2.3. Maintenance Budget

The complex modern library requires constant attention to ensure that it continues to function smoothly. The library is responsible for the ongoing maintenance of its resources and services. This includes not only provision for replacement of equipment and library materials, but also keeping adequate statistics and other performance measures to determine whether the standards of service are being maintained.

5.3 Human Resources

The library is dependent on human resource skilled in the knowledge based functions to achieve its goals. People select, acquire, process and organise the library's collection and provide access to the information contained in these collections and the collections of other libraries, they direct its activities and provide its services.

5.3.1 Level of Staffing

The library should be staffed in such a way as to meet the university's expectations. The number of required staff is determined by the programmes offered, the size of building and service points and the hours during which service is offered.

5.3.2 Kinds of Staff Needed

The staff should include librarians and other professionals, support and administrative staff. To reflect the libraries' involvement in the academic programmes of the university librarians should have appropriate educational backgrounds in library and information science as well as in other disciplines. They have the right as professionals to speak out on their professional concerns without fear of reprisal or dismissal.

5.3.3 Management

The library under the librarian should be responsible for managing its own affairs. The chief librarian is responsible for all staff within the

library and should ensure that the library adheres to the personnel policies and practices of the university.

5.3.4 Staff Development

Librarians need to keep pace with the changes in the field of library and information science and other disciplines. The staff and the library administration have a joint responsibility for the development of their knowledge and skills. The administration too should provide the leadership resources, and management to foster the co-operative process, the goal being to ensure that the library retains the skills needed to provide service to the academic community at proper level.

5.4 Collections

The primary goal of a university library is to select, collect, organise and provide access to all varieties of information for users. Library programmes should be developed with that goal in mind.

5.4.1 The library shall select and acquire materials in all formats to the required level to support academic programmes in research, teaching and public service, collection management includes planned resource-sharing, co-operative storage and electronic access to databases.

5.4.2. The library should have adequate safeguards against loss, mutilation, and theft. Since the library has a primary goal of maintaining open access to information it is particularly vulnerable to those who take advantage of the public goal that the library represents.

5.5 Building Resources

Today the university libraries are experiencing dramatic change produced by an avalance of books, micro-form computers and new communication technology ranging from lasers to satellite relays in what has been coined 'telematics'. The changes have called into question the role and organisation of libraries and their materials including how they should be planned and housed.

More of the clerical, technical and labour-intensive library functions such as acquisition, cataloguing, circulation, bibliographic and literature searches are now wholly or partially automated in many libraries. These technological and related social changes are imposing the design and planning for the library structure of tomorrow. These changes include:

5.5.1 Increased emphasis on modular planning to ensure maximum flexibility for the library interior.

5.5.2. Greater attention to ergonomics (the relationship of users and staff to furnishings) including seating, terminal stations, and electronic media equipment to achieve the most effective work environment for maximum efficiency and productivity.

5.5.3. More effective temperature and humidity controls sensoring devices and fitters to preserve the diversity of library formals—books, audio-visual materials, computer tapes and related electronic equipment.

5.5.4. Increased utilisation of compact shelving, to house lesser-used materials in order to free floor space for new and future functions in the library.

5.5.5. Planned incorporation of more sophisticated fire, smoke, heat and intrusion safeguard systems and electronic theft prevention systems.

Today's library planners, architects and interior designers are given two important briefs; design a library building that is responsive to the changing role of libraries produced by the technological and social influences and at the same time, design a facility to accommodate the ongoing traditional service functions. Libraries have long assumed the role of conserving and preserving our cultural and academic heritage. Today that role is dramatically expanded as libraries are expected to bridge the gap between our print-oriented educational system and emerging electronic society. Librarians can respond affirmatively to the challenge provided that the new library buildings are carefully planned to easily accommodate and support future changes in services.

5.6 Services

The main goal of university library is to provide services to its community which includes, students, scholars and teachers.

5.6.1 *Access:* The library should ensure optimal access to its own collections and to required, resources available elsewhere by developing and maintaining appropriate policies and procedures.

5.6.2. Catalogue and other records should inform the user about what is owned, where it is located and how to find it. They should be comprehensive and up-to-date, and adhere to accepted national and international standards.

5.6.3. Collection should be systematically arranged using a readily understandable taxonomy. If storage facilities are used, retrieval should not place an undue burden on the user.

5.6.4 The library should provide information transfer services of two kinds. The physical transfer of documents and the fascimiles of documents and the transfer of data electronically.

5.6.5. The library should be prepared to perform wherever appropriate to faciliate direct transfer to the access of information so available, as for example from data banks, or by referral to other agencies capable of meeting the needs.

5.6.6. Libraries having Internet and e-mail facilities may provide the information to the users by taking minimum charges.

5.7 User Education

The library should provide directional, informational, instructional and reference services. These services include not only the answering of questions and instructions in the use of the library, but also the provision of printed, graphic or electronic aids, by these means the library staff should endeavour to create an awareness of the need to understand the ways in which information seeking has changed and is changing. the programme should therefore be dynamic rather than static in its orientation.

5.7.1. The library should provide services designed for all levels of user from a fresher to faculty member. By teaching, the use of printed guides, bibliographies, the development of electronic aids and personal interaction, the library staff should seek to assist users in finding needed material and developing appropriate search strategies.

5.7.2. Bibliographic instructions, both formal and informal should play a significant role in helping library users improve their skills.

5.7.3. Library design should also play a role in making the library understandable. Similarly the services such as on-line catalogues should be designed with the user in mind.

5.7.4. These services should be provided not only in the library itself but also in the classroom and through public media, both on and off campus including extension programmes.

5.8 University-wide Co-operation

To fulfill its goals, the library requires support within the institution and in turn support other programmes.

5.8.1. The library should co-operate with and participate in all university services and programmes concerned with information and communication. These activities include all functions as admissions, continuing education programmes, computer services, telecommunication, audio-visual services, publishing, copyright, depository and exchange arrangements.

5.8.2. Other services: Where access to library services is made possible for any external community, students in off-campus courses, or the residents of a state, scholars from other states etc.

5.8.3. Computerisation and Networking: The library should anticipate changes in the field of information technology. The library should adopt and maintain new technologies as they develop and are useful in meeting its goals. By developing networking systems with other university libraries the library can be able to serve its users efficiently and satisfactorily.

Standards are needed to maintain co-operation among the university libraries.

5.9 Evaluation

Annual and periodical reviews can help in evaluating the working conditions of the university libraries.

5.9.1 An annual reporting process provides an opportunity for review of successes and failures, and for the development of new goals.

5.9.2. Periodical reviews whether carried out by internal or external review teams should include self-assessment, examination by the review team and review of any reports and recommendations by the university and the library.

6. CONCLUSION

As we move rapidly into a world of exploding information and as the world shrinks with the rapid expansion of telecommunication links, standards become especially important. Information is not confined within national boundaries and it is the technical standards which enable information to move across borders, continents and oceans. The benefit of placing responsibility with the government is that there is a strong legal force which ensures the implementation of the standard.

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Total Quality Management in Online Information Retrieval

B.R. NAGAR AND V.V. LAKSHMI

ABSTRACT

The paper deals with Total Quality Management (TQM), its application in online information retrieval through various databases available on online systems with special reference to Dialog Online System. It discusses about why online is chosen for TQM, prerequisites for doing the online searching and emphasises that the quality of searcher, customer and management of the service provider are equally responsible for bringing out the TQM in online information retrieval services. It also discusses about various stages through which TQM can be achieved by providing efficient online searching facilities to various user communities and about different steps which are to be taken to make the information products commercially viable

1. INTRODUCTION

The problems of organising information for retrieval and access are nothing new. However, earlier the emphasis was on preservation and storage rather than on its retrieval. Libraries were more a storehouse of documents. The pressures brought about by information explosion have highlighted the problems involved in retrieval. The focus has moved from collection and preservation to retrieval and selection.

The technology has speeded up the process of search and retrieval. The amount of information retrieval in online information systems is daunting. The variety of different ways to access it means that selection and evaluation are key ingredients to successful searching. Thus technological developments have resulted in an increased need for training of searcher and the user to ensure the most efficient use of

these systems. The concept of Total Quality Management (TQM) in information retrieval systems can revolutionise the way the information can be retrieved and ensure customer satisfaction.

2. DIALOG ONLINE SYSTEM

DIALOG is considered one of the largest online information retrieval systems in terms of the quantity of information provided. It provides international access to information in different subject areas. All the major Databases such as CAS (Chemical Abstracts Service), INSPEC (Information Services in Physics, Electronics, Computer and Control Technology), COMPENDEX (Computerized Engineering Index), AGRIS (Agricultural Information System) and MEDLINE can be accessed using this Online System. It also searches for specific document such as patent and standard. It is also a very good source for searching market information. The information available through DIALOG is divided among 2000 databases for different subject disciplines. The databases can be searched through DIALOG search language such as Begin, Select, Type and Logoff. This service is provided through headquarter of DIALOG *i.e.* Palo Alto California.

3. ONLINE INFORMATION RETRIEVAL

Typical elements of a document based inforamtion retrieval systems consist of inputs and outputs, the matching mechanisms, and a series of activities including:

Selection of databases; conceptual analysis of queries; formulation of search expression; delivery of documents.

The inputs to the system include: new documents selected on the basis of user needs; ad hoc queries posed by the system users; Indexing language used by the searcher.

The outputs are: documents retrieved in response to the queries; and factual queries answered.

4. QUALITY

Online searches are conducted in real time. The searches are conducted in an interactive, conversational fashion, where the searcher can select and discard items while the actual search is in progress. In

other words the customer is the ultimate judge of the quality of the output. In context of online searching, the quality depends upon what the customer wants in order to satisfy the need for information through online databases. It also depends upon timeliness and exhaustiveness of information. Quality can be defined here as product or service that satisfies customer specifications.

5. QUALITY MANAGEMENT PRINCIPLES

Quality management (QM) covers all facets of business and it aims to improve the overall quality of work by every one in the organisation for achieving greater customer satisfaction and higher returns. It is not just confined to quality control or quality assurance. QM is a comprehensive and fundamental rule or belief for leading and operating an organisation aimed at continually improving performance over the long term by focussing on customers. The following rules can be applied in information retrieval to get the optimal results:

- Total quality focussed
- Information technology based
- Vision directed
- Customer driven
- Flexible and adaptive
- Time based or even real time
- Innovative
- Global
- Networked

6. ONLINE SEARCH

In the context of above, a number of steps are required prior to conducting the actual search. These prerequisites include:

6.1 Search Profile Sheet

For the online search service, a search request form is an important starting point. A search request expressed in narrative form and natural language is likely to produce better results than a list of potential search terms. Search profile sheet should be prepared in such a way that each and every detail about the query can be easily given by the user. There are two types of users. Those users who are present at the

time of search are known as direct users. Indirect users are those users who send their request by post. For indirect users, this is the only link between user and searcher. Search Profile Sheet must contain all the essential details pertaining to the query, such as:

(*i*) Topic of the Search
(*ii*) Subject
(*iii*) Chemical substance name, formula & chemical registry no.(in case of queries on chemical compounds
(*iv*) Keywords (synonyms) for each aspect of specified topic.
(*v*) Aspects unwanted or to be eliminated
(*vi*) Period to be covered
(*vii*) Maximum no. of document records required (with abstract/ without abstract/full text)
(*viii*) Language of references to be retrieved
(*ix*) Type of information required (Business/Market/Financial/ R&D)
(*x*) Whether search is to be high recall, i.e. broaden the specified topic, if retrieval is too less?
(*xi*) Whether search is to be high precision, i.e. narrow down the specified topic, if retrieval is too high or generic
(*xii*) Any limit on the expenditure

6.2 Explaining Online Systems

Conducting online searches is a costly affair and the searcher has to convince the customer that he will be supplied the quality information. In order to build the customer confidence, searcher has to make some extra efforts to show the sample output/outputs in his/her (customer's) field of activity. Other tools, which have been used for conducting online search, can also be shown to the customers such as

(*i*) Catalogue of online databases *i.e.* dialog catalogue
(*ii*) Dialog chronolog
(*iii*) Blue sheets to explain the intricacies of the database to be searched

7. TOTAL QUALITY MANAGEMENT

It is defined as disciplined approach for management and employees to manage quality and also to improve product quality and customer

satisfaction as per their needs. It is defined as a journey, which will never end. It provides the overall concept that fosters continuous improvement in an organisation. It is also defined as a system of continuous improvement employing participative management and centered on the needs of customers (Jurow & Barnard, 1993). Key components of TQM are employee involvement and training, problem solving teams, long-term goals and thinking, and recognition that the online searcher receives from the customer after rendering quality service/ services to him/her. The TQM philosophy stresses a systematic, integrated, consistent, organisation wide perspective involving everyone and everything. It focuses primarily on total satisfaction for both the internal and external customers within management environment that seeks continuous improvement of all systems and processes. The key focus of TQM lies on the customers because it is they who define the quality. Its ultimate aim is to provide right information to the right customer at right time.

8. IMPLEMENTATION OF TQM IN ONLINE INFORMATION RETRIEVAL

India has always been in the forefront as far as application of IT to library and information sciences is considered. As far back as 1987 National Information System for Science and Technology (NISSAT)/ Department of scientific and Industrial research (DSIR) had set up of five online access centres to use computerised databases online. These centres were known as NISSAT Access Centres for International Datacentres (NACID) & Indian National Scientific Documentation Centre (INSDOC) was one of them. In the year 1993-94 four more NACID centres were established. At present INSDOC is one of the premier institutes for rendering online searches through various databases to a varied clientele. It has developed the infrastructure, expertise and is self-sufficient in this field of activity.

In order to implement TQM in online information retrieval, all decisions regarding how the different search services will operate need to be implemented through the design of appropriate policies.

8.1 Work Culture

Three parameters that are essential for the successful implementation of the TQM are commitment, culture and cost. Work culture should be

the pre-requisite for the implementation of TQM. Work culture can only be developed through constant efforts of employees and management. It could be achieved by placement of employees at right place based on their capabilities and expertise. Incentives should be given to the dedicated worker wherever and whenever they are due. TQM in library context should not be misunderstood as one time approach but as a continuous process that is essential for improvement of all library services aimed at resource development and utilisation.

Customer feedback, both critical and appreciative is one indicator of quality and it provides some directions for potential improvements. However, absence of dissatisfaction is not necessarily a proof of customer satisfaction. Following methods should be adopted to judge the customer satisfaction

- Customers can be asked to give their assessment on the online services offered to him. This will help in the comparison of the organisation with its competitors and try to increase the repeat customers.
- Employee survey and suggestion boxes can provide valuable information in order to bring out the overall development in the online services.

Key elements for implementing TQM in online information retrieval are as follows:

(*i*) Identify internal and external customers.
(*ii*) Improve customer satisfaction.
(*iii*) Increase opportunities for customer interaction and feedback.
(*iv*) Provide value added services.
(*v*) Encourage innovations & efficiency.
(*vi*) Communicate openly; and
(*vii*) Identify staff training, education, & development opportunities.

9. QUALITY OF SEARCHER

Organisations depend upon their customers and therefore should understand their current and future needs, meet customer requirements and strive to exceed customer expectations. Searcher is the interface

between the user and online databases and has to develop his abilities and expertise to carry out cost effective and quality searches. In order to meet the stated and implied needs of customers an effective searcher should have the following qualities:

9.1 Self-Confidence

He should have a high sense of dedication to the job and should also be comfortable with man-machine interactions.

9.2 Logical mind

He/she should have the ability to solve the problem and possess good organisational abilities

9.3 Good Communication Skills

Interaction with customers affects the perceptions of quality. Skills in communication and interpersonal relationship with customer are essential qualities of the searcher. Spending a little time with each customer can bring wonders. Properly handled, a disaster can be turned into a triumph. The searcher should develop confidence in the end user that end user's query is understood properly and will be solved.

9.4 Knowledge of Subject

If the searcher is well versed in the subject area of search, the search results would be more accurate, searches can be conducted faster with much better results.

9.5 Training

Though formal training is an essential pre-requisite for doing online searches, yet much more is required than formal training for searching online databases. The expertise can be built up with constant practice and perseverance. It involves mastering of the intricacies involved in each and every database. The searcher has to update the information continuously through the use of the tools like Dialog Catalog, Blue Sheets, DIALOG Chronolog & Newsletter and thesaurus constantly.

9.6 Information Sensitivity

Because online searching requires knowledge of highly dedicated information. He/she should have retentive memory.

9.7 Perseverance and Patience

Perseverance and patience are the key to successful online searching. The searcher should be willing to try as many formulations as it takes in order to obtain desired information. Some queries require a great deal of trial and error in order to get correct and accurate results. They should have patience and ability to adopt to adverse conditions in terms of infrastructure and other problems like computer problem, interruptions in communications channels or host computer problems. Efficient, orderly work habits help searcher to execute the queries more effectively. Well-planned and executed search formulations are necessary for cost effective operations

9.8 Share Knowledge

The searcher should inform the other staff members of the library/ information centre about new databases and related literature added in online systems and also about its capabilities and limitations.

9.9 Technological Awareness

Knowledge about technical details of databases, communication networks, cost components as well as intricacies involved in online search systems.

9.10 Quality of a Customer

The next generation customers will be different than the previous generations. More and more customers will be high aiming people with technical knowledge. The resistance to buy something may not just be the price, but the risk involved, time involved and psychic costs.

9.11 Online Awareness

Online training will create an awareness among the users of online systems about databases available online, their contents and how to search these databases. Such training will be useful both to library and information professionals as well as users/customers. Online search is an end user/customer oriented search, so it is the prime duty of the customer also to be acquainted with the latest developments in the field of activity and also to be aware of the facilities available. Knowledge of the key institutions where research is being undertaken and from where valuable information can be obtained is another factor.

9.12 User Searcher Interaction

Suppose the customer wants to make a search on educational software and he has supplied *education* and *software* as two keywords. After seeing the query, it is the duty of searcher to tell the customers that because he has selected ERIC (Educational Resource Information Center) database which is already related with educational aspects, it is better to use software as keyword. Here it the duty of the customer also to ask the searcher that whatever keywords he/she has given are sufficient or some other keywords can be added or deleted here to make a quality search.

10. MANAGEMENT QUALITY

Management has a critical role to play in achieving total quality. Of the two management styles *viz.* authoritative and participative management styles, the former is easier. In the former type of management busy manager can take some work from the employees after giving a careful balance of threats, penalties and rewards. Participative management on the other hand makes it imperative for the manager to understand his colleagues better and carry them along.

The goal of customer satisfaction can be achieved only through loyalty of staff towards the organisation, job satisfaction they got out of their involvement in the work and group activities *i.e.* team work, conducive to a healthy participation in the organisation. True judgement of the management whether it is authoritative or participative should depend upon the quality work that is performed by searcher in case of online information retrieval. The judgement can be formed on the basis of feedback received from the customer, In order to develop work culture, the employees who are involved in bringing out the quality work should be suitably rewarded.

11. ROLE OF DESPATCH SECTION

In order to bring TQM in online information retrieval, despatch section also plays an important role, as employees associated with dispatch section are the persons who are dealing with the dispatching of the outputs. If these persons are not doing their job properly the customer will not receive their outputs on time.

12. CONCLUSION

TQM is still a new concept in library and information science sector. Hence stress should not be on immediate results. Sufficient time should be given for results to be achieved.

The introduction of quality management practices will bring about an overall improvement in the services. There will be better employee relationships, higher productivity and greater customer satisfaction. Motivated staff and satisfied customers will help the organisation face the challenges and competitors efficiently. The customer is now more discerning, and it is imperative that the services become more customer focussed. It is important to establish measures of satisfaction for assessing customer needs/expectations. Continuous evaluation of service quality and customers' expectations will help in determining how far the customers needs are being met at present

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Application of IT in Libraries

ASHU SHOKEEN AND SANJAY KUMAR KAUSHIK

ABSTRACT

After the industrial revolution, the man kind has witnessed change in all spheres of life. From the days of papyrus to the digital libraries, libraries have been undergoing a series of developments. Last few decades of 20th Century saw the emergence of new technologies such as computer, CD-ROM, e-mail, e-commerce, e-book, INTERNET, bar coding, etc. This paper describes various information technologies and discusses spheres quality management where IT can be applied for library services.

1. INTRODUCTION

The purpose of any modern library is to provide the right information to the right person at the right moment in the right manner. Information explosion has created problems for proper processing and dissemination of information and has made it impossible for any library to rely solely on manual or semi-manual methods of information handling. Moreover, in addition to books and serials, library collection consists of information in various machine readable forms such as microfiche, floppy discs and CD-ROMs, etc. The conventional library *i.e.* paper based library is gradually changing through variations and evolution to a new form, which is based primarily on electronic information.

Information Technology (IT) *i.e.* convergence of computer and communication technologies changed the society to a great extent and have compelled the traditional librarians to appreciate, understand and apply these new technologies which could help them

successfully to meet out the increasing demand for information from the clientele.

2. INFORMATION TECHNOLOGY (IT)

The various information technologies applied by the library and information professionals can be summarised as:

2.1 Computers

Computer is a device for automatica processing of information. It has three components *viz.* Input device, central processing unit, and output device. Input devices are keyboard and floppy discs. CPU processes the information received through input devices. Output devices are monitor (video display unit), printer, on-line transfer of information. Computer can store, process and transfer/retrieve information with greater accuracy and speed. That is why these two aspects *i.e.* computer and library are coming closer nowadays.

2.2 CD-ROM

The CD-ROM technology is available only for about last decade and has become really popular in the last several years. A CD is a 12 cm diameter disc made from polycarbonate substrate and a reflective metalised layer. It weights 16 grammes. A CD-ROM can store about 650 MB data (about 250000 pages of text). The access time through a CD is in milliseconds. The basic data transfer rate by a CD drive is 150 Kilo bytes per second (kbps) and "4x" driver transfers at the rate of 600 (4*50) kbpsz. "16x" and "24x" CD drive are also available in the market.

2.3 Satellite Technology

Satellite technology has revolutionised the quality of life. A global satellite communication network could employ as few as three satellites, but in fact, many satellite make up the present day satellite communication network. As the marriage of computers, digital and cellular technologies with satellite communication takes place, a global seamless information infrastructure that will significantly enhance the value of the connectivity, is provided. This enables satellite technology to knit the world more closely together than ever before to truly realise a concept of global village.

2.4 Advanced Networking

The effort to harness the utility and penetrations of IT resulted in Local Area Network (LAN), Metropolitan Area Network (MAN) and Wide Area Network (WAN) which finally led to the birth of the network of networks *i.e.* INTERNET. There are various library networks in India such as: DELNET, CALIBNET, INFLIBNET, PUNENET, MALIBNET, etc.

2.5 Bar Code Technology

The bar coding setup includes the bar code scanner to read the bar coded information, its interfacing with the library computer, the software to convert the requisite information to bar codes and the printer. The bar code software converts the data into bar codes (series of black and white lines) which can be printed through printer and then pasted on the documents or borrowers' identity cards. The light beam flashed from the bar code scanner on the bar code label undergoes reflection at the white lines and absorption on the dark bands. This reflected light is collected back and is converted into electric pulses by the photo electric circuitry of the scanner. Further, these pulses are converted into binary digital information by the interface circuitry of the scanner before they are fed to the computer for further processing. The information read from the bar code acts as a substitute for the same information entered through keyboard, to handle circulation/ other routines of the library database.

3. IT APPLICATIONS IN LIBRARIES

It has opened virtually immense potential for a variety of applications in libraries. Most of the operations within the library are inter-related, inter-dependent and mutually supportive for the overall mission of library. Application of IT to interface and integrate each operation with other saves lot of time for the library staff as well as users. The different spheres where It is being applied by the libraries are:

3.1 Acquisition Control

The computers have eased the burden of acquisition system of the libraries. With the help of computer reordering, checking of duplicate orders and follow up action can be taken care of automatically. It has speeded up the accessioning of documents.

3.2 Processing

It has also speeded up the processing of documents by eliminating a large amount of repetitive and time-consuming work. Machine-readable cataloguing is easy to manipulate as it can be searched on-line from which varieties of output are available.

3.3 Circulation Control

The lengthy and time consuming procedures of traditional circulation control are taken up by the IT devices like computers, bar code scanners and its software helps in performing the operations quickly and easily. IT helps in operations like issue and return of documents, reservation of documents, sending reminders of overdue documents, collection of overdue charges and maintenance of various records.

The circulation work in an automated library involves keying in a large amount of data. Sometimes, the library staff at the counter has to retype the same information due to error in data entry. This voluminous work can be handled in a smooth manner in a much less time by the application of bar code technology. The speed of data capture is three times faster than the speed at which a skilled data entry operator can input data and also the error rate is negligibly small.

3.4 Serials Control

IT helps in periodical subscription and subsequent monitoring of the receipt of individual issues. It helps in maintaining record of budget sanctioned and expenditure on various categories of periodicals. Computers have made possible automated reminder generation of missing issues of periodicals.

3.5 Inter-Library Loan

IT has influenced the ILL service very much. The use of various IT devices like computers, fax, e-mail, etc. have eased online searching. Thus, IT has reduced the time consumed for receiving documents on inter library loan.

3.6 Other Spheres

In addition to the above operations of the library, IT application is possible for different other functions of the libraries such as reference service, information storage and retrieval, office automation, and networking, etc.

4. SCOPE

The aim of this paper is to study the IT application in university libraries of Delhi and Haryana. Three university libraries of Delhi *i.e.* Delhi University, Jamia Millia Islamia University and Jawaharlal Nehru University and four university libraries of Haryana *i.e.* Guru Jambeshwar University, Hisar; Chaudhry Charan Singh Haryana Agriculture University, Hisar; Maharshi Dayanand University, Rohtak and Kurukshetra University, Kurukshetra have been included in this study.

5. HYPOTHESES

Almost all the university libraries in Delhi and Haryana have initiated IT applications. The services like acquisition, circulation, CAS etc. have been automated. All the libraries in Delhi have access to the networks like DELNET and INTERNET, etc. the university libraries in Haryana have ERNET and INTERNET facility. Users of all the libraries included in the study are making use of computerised services and they are availing of on-line services and as well.

6. METHODOLOGY

The data for the present study were gathered with the help of two questionnaires meant for university librarians and users.

7. ANALYSIS

Table 1 shows that 99.97 per cent of the collection of university libraries included in the study is in print form. Only 0.23 per cent of the total collection is in non-print form *i.e.* machine-readable form.

Table 2 reveals the fact that all the university libraries of Delhi and Haryana subscribe periodicals in print form only. Not even a single library has periodicals in electronic form.

A perusal of Table 3 reveals that three libraries have access to DELNET and INTERNET. Four libraries have access to INFLIBNET and one library has access to ERNET. No library has access to SIRNET and NICNET.

Table 4 highlights that use of computerised services is very low. Table 5 shows that although all the university libraries except one

provide e-mail service to their users, but still users' awareness about this service is not up to the mark as 35 per cent (*i.e.* 110 out of 315 respondents) are unaware about this service.

8. CONCLUSION

The success of a library depends upon to a large extent on the effective organisation of the house keeping activities as well as data network facilities. The university libraries of Delhi and Haryana are at the initial stage of IT application and these libraries and library professionals are slowly adjusting to the changes being made by IT. It is the need of the hour that all university libraries should go for automation speedily and provide efficient and effective services notwithstanding the difficulties in their way. The users' awareness about the computerised services is very low and as such there is a need for developing awareness and positive attitude among users towards computerised services.

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APPENDIX

Table 1: Distribution of Collection

Name of University	*Print documents*	*Non-Print documents*
GJU	14761	–
HAU	263178	377
MDU	223350	278
KUK	275394	–
DU	1306643	–
JMI	279550	–
JNU	462330	–

Table 2: Distribution of Journals in University Libraries of Delhi and Haryana

Name of University	*Print Journals*	*Journals in Electronic Form*
GJU	109	Nil
HAU	1322	Nil
MDU	580	Nil
KUK	400	Nil
DU	1340	Nil
JMI	550	Nil
JNU	795	Nil

Table 3: Networks to which University Libraries in Delhi and Haryana have Access

Name of Network	*Access*	*Not Access*
DELNET	3	4
SIRNET	0	7
ERNET	1	6
INFLIBNET	4	3
INTERNET	3	4
NICNET	0	7

Table 4: Use of Computerised Services

Services	*Users*		*Non-users*	
Computerised Services	81	25.71%	234	74.29%
Literature Search with in the Library	22	6.98%	293	93.02%
Literature Search Through the Local Network	15	4.76%	300	95.24%
Literature Search Through National Network	18	5.71%	297	94.29%
Literature Search Through International Network	42	13.33%	273	86.67%
Issue/Return of books by Computer	Nil	Nil	315	100%

Table 5: Use of e-mail Service

	Frequently	*Sometimes*	*Rarely*	*Never*	*Not available in the library*
Frequency	22	71	57	55	110
Percentage	6.98	22.54	18.1	17.46	34.92

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Application of TQM in Networking of Libraries

S.L. SANGAM AND V.M. BANKAPUR

ABSTRACT

The article deals with various aspects of Total Quality Management in networking of libraries. It discusses application of TQM for improvement of services and products in the libraries. States the customer driven services. Lists the key standards from ISO and CCITT networks. Gives the basic components involved in the network planning. Finally concludes that ISO 9000 is the useful guide to improvement and provides a vital link for disseminating the services to the end user.

1. INTRODUCTION

As technology pushes us towards an information intensive society, we can see a marked change in the culture of information use. Information is becoming embedded in our culture, shaping the way in which we work, play and enrich ourselves. In such circumstances what need is there for information professionals when everyone becomes more professional in their use of information. No doubt, the demand for information professionals will continue to expand. But the skills and abilities required by those professionals will be different from what we have known earlier. There is emergence of three complementary groups of information professionals: Creators, Communicators and Consolidators. Quality is an important characteristics associated with any product or services. The people using the systems that satisfy the need of the clients deliver quality. It is an achievable, measurable and cost effective goal that can be introduced in the

organisation provided there is a commitment and understanding. Changes and the challenges faced by the libraries in today's world of information technology and the networking concepts which are developing at a faster rate than expected. The maximum utilisation of these infrastructures for adopting the 'Total Quality Management' lies in improving and refining the library and information services through the best possible networking solutions. Present paper discusses the related factors of TQM.

2. TQM FOR IMPROVEMENT

TQM can be described as a set of guided principles that form the foundation of a continuously improving organisation. TQM is application of quantitative methods and human resources to improve the sources and materials supplied to an organisation, all the processes within organisation and the degree to which the needs of customer are met, now and in its future. TQM is the integration of all such functions, processes and personnel within the organisation in order to achieve the continuous improvement of the quality of services.

TQM can be better understood, if we look into each word closely.

TOTAL–everybody every level, every process, every day and

QUALITY– continuous improvement of every thing that we do.

MANAGEMENT–organising, maintaining controlling and continuously improving tasks of management by rotating PDCA cycle (plan, do, check, and act). In brief TQM is the participation of each and every person in an organisation performing quality control continuously so as to satisfy the needs of internal and external customer. TQM is a journey and not a programme with a finish point. It is a group activity and managed on the basis of respect for humanity. It is management with facts and data. The entire structure of TQM is built on the following foundation:

(*i*) To create satisfied customer

(*ii*) To manage with leadership and involvement

(*iii*) Participation by all (total involvement)

(*iv*) Continuous improvement.

3. TQM APPLICATIONS FOR LIBRARY

Before we go into the details of basic components, let us see the fourteen points advocated by "Gurus of Quality management" as fundamentals for TQM.

(*i*) Create consistency of purpose for improvement of product and service.
(*ii*) Adopt the new philosophy.
(*iii*) Cease dependence upon inspection to achieve quality.
(*iv*) End the practice of awarding business on the price tag alone.
(*v*) Improve constantly and forever every process.
(*vi*) Adopt and institute leadership.
(*vii*) Drive out fear.
(*viii*) Breakdown barriers between staff areas.
(*ix*) Eliminate slogans, exhortations and targets for the work force.
(*x*) Eliminate numerical quotas for the work force and numerical goals for management.
(*xi*) Remove barriers that rob people of pride and workmanship.
(*xii*) Institute rigorous programme of education and self-improvement for every one.
(*xiii*) Take action to accomplish the transformation.

It is pointed[2] out that 'if people do not believe zero defects are possible, they will never achieve that goal for quality managements' and emphasises on four absolutes, they are:

(*i*) Quality is defined as conformance to requirements.
(*ii*) The system for causing quality is prevention.
(*iii*) The quality performance standard is zero defects.
(*iv*) The measurement of quality is a price of non-conformance.

4. CUSTOMER DRIVEN SERVICE

The core of TQM is service and satisfaction of the customers and they are the right judges to assess the service. "TQM seeks to continuously improve customer satisfaction by quality–led organization wide management." The quality of service is defined by the customer and the total success of TQM is determined by the level of satisfaction amongst the customers; in other words it should delight the customer. Customer needs may be assessed by means of focus group, surveys and

suggestion systems, which convey whether the libraries are doing a good job for them or not and these surveys are very basic in implementation of TQM.

5. TQM IN LIBRARIES

TQM in the library invites to make changes in the organisational structure by traditional hierarchical to horizontal structures, to bridge the gap between those on the frontline and the senior management. Here, senior management is responsible for strategic decisions and policies and empowered employees must work together in teams to achieve excellence in the provision and promotion of information services and they must act as agents of information transfer rather than just, keepers of knowledge.

Therefore, the active libraries and librarians must develop and adopt modern management approaches and strategic visions like TQM towards customers services on more effective basis and every act of library should come under the scope of TQM. Because it is focused on "continuous improvement in products and services the elimination of rework, Team work, a flattened organizational structure with greater employee involvement and an increased emphasis on customer needs"[3] and hence "TQM certainly offers excellent opportunities for the library and information sector to improve quality and user satisfaction and to create organizational structures and cultures fitted to meet further challenges.The quality management is not only in terms of quantity, they are defined as officially adopted and widely accepted quantitative and qualitative norms which have been interpreted as the pattern of an ideal, model procedure, a measurement for appraisal, a stimulus for future development and improvement. It is a instrument to assist decision and action".[4]

Therefore, application of TQM in networking of libraries will provide a vital link in the units' relations with administrative and managerial decision-makers by applying TQM, we become proactive rather than reactive, and we no longer simply react to an administrative mandate asking us to produce results, justify our worth and relate what we do to our host organisations and their strategies and goals.[5]

Thus the TQM has been and will continue to be, a issue of strategic importance to librarianship and remains an integral part of the profession.

6. LIBRARY NETWORKS AND TQM

Networking plays a vital role in sharing the resources, developing the communications, reduction of costs and an environment more global in nature. So the concept of LAN, WAN, MAN, intranet, extranet and Internet has to be adopted for the development, evaluation and utilisation of information by applying principles of quality to the system of networking by designing, developing, analysing and implementing at the vital stages of networking of libraries. Each stage of activity in networking terms of technology should uphold the quality standards for total quality management approach. Networking standardisation are prescribed by ISO (International Standards Organizations) on vast number of subjects. The US representative in ISO is ANSI (American National Standards Institution). Another major player in the standards world is IEEE (Institute of Electrical & Electronics Engineering) that develops standards in the area of electrical and computing components. IEEE's 802 standards in LAN is the key standard.[6]

There are many standards available for networking, from ISO and CCITT (Comite Consultatif Internal de Telegraphique et Telephonique). The ISO has also adopted standards for connection-oriented session services and protocol. FTAM (file transfer, access and management) protocol provides a way to transfer, access, and generally manipulate remote files in a uniform way. The MOTIS (Message Oriented Text Interchange Systems) protocol is used for electronic mail. It is similar to the CCITT x.400 series of recommendations. The VTP (virtual Terminal Protocol) provides a terminal-independent way for programmes to access remote terminals (*e.g.*, for full screen editors). The JTM (Job Transfer and Manipulation) protocol is used for submitting jobs to remote mainframe computers for batch processing. It can be used to move both programmes and data files. Numerous other Industry-specific and application–specific protocols have also been defined, and new ones are being chalked out and standardised.[7] The following are the key standards from ISO and CCITT (French acronym for its name: Comite Consultatif Internal de Telegraphique et Telephonique) networks.

LAYER	*STANDARD*	*DESCRIPTION*
1.7	ISO 7498	ISO OSI Basic reference model
7	ISO 8571	File transfer, access and manipulation protocol
		ISO 8572 File Transfer, acess and manipulation service
7	ISO8831	Job transfer and Manipulation service
	ISO8832	Job transfer and Manipulation protocol
	ISO9040	Virtual Terminal service
	ISO9041	Virtual Terminal Protocol
	CCITT X.400	Message handling (E-Mail)
6	ISO 8822	Connection-oriented presentation service
	ISO 8823	Connection-oriented presentation Protocol
5	ISO8326	Connection oriented session service
	ISO8327	Connection-oriented session Protocol
4	ISO8072	Connection oriented transport service
	ISO8073	Connection oriented transport protcol
3	CCITT X.25	X.25 layer 3 protocol
2	ISO 8802 CCITT X.25	local area network HDLC/LAPB data link layer
1	CCITT X.21	Physical layer digital Interface

The library networks have to adopt the above key standards which are useful in the quality management system and the basic components

involved in the network planning are:

(*i*) Hardware
(*ii*) Software
(*iii*) Training
(*iv*) Maintenance
(*v*) Supplies
(*vi*) Personnel
(*vii*) Installation.

7. CONCLUSION

The objects of networking is to promote maximum utilisation of information through sharing the resources by a group of libraries. It coordinates efforts for suitable collection development and reduces unnecessary duplication of costly reading materials. Network establisher referral centers' online union catalogue of books and other non-book materials of all the participating libraries. It helps implement computerisation of operations and services in the libraries for fast communication of information. It facilitates coordination with other regional, national and international networks for exchange of information and documents. It also evolves standards for uniform guidelines in techniques, methods, procedures, hardware, software, services, etc. In order to facilitate sharing and exchanging of resources, in a effective way TQM is an essential management tool. The goal of networking of libraries will help in setting higher objectives and service standards in library and information sciences.

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Digital Libraries: The Pillars of Quality Assurance

K. VEERANJANEYULU AND L.S.R.C.V. RAMESH

ABSTRACT

This paper discusses the need for evolution of digital libraries, the ways and means of digitised information availability, and terminal benefits to the society.

1. INTRODUCTION

Digital medium is fast replacing the paper in a dramatic revolution. This development is attributed to several reasons. The traditional library methods of information transfer are incapable of handling large data, and servicing users effectively, especially in resource sharing environment.[1] It is also attributed to electronic databases, for the amount of data that they store in mind boggling. It is also attributed to digital technology for its ablity to handle text and other media elements such as sound, graphics, pictures, colours etc. [2]

2. QUALITY OF INFORMATION IN DIGITISED FORMAT

The latest technologies offer cheap computer processing power, cheap mass storage, inexpensive and ubiquitous access to high speed networks, and retrieval devices. These give us the ability to create, manipulate, store and transfer large quantities of information in digital from at low costs. Though conversion from the conventional storage to digitised format requires deft handling and discrete analysis, the information stored in digital form can be had as hyper books on CD-ROM.

(a) Hyper Books

Hyper books are electronic books defined on the basis of the paper back metaphor. Metaphors have been widely used to facilitate learning of computer system. It is a model with which the user is familiar and it enables users to exploit their existing knowledge of other domain when learning to use a system.[3]

Hyper book contains text and graphical images. Graphical objects are always visible and appear in the text much the same way as in a paper book. The feature of the hyper text is that it contains embedded links *i.e.* active text that is connected to other parts of the book.

(b) CD-ROM

The CD-ROM stores multimedia data permanently. The end user cannot put his own information on it.[4] The essential features of CD-ROM technology are as follows:

- high storage capacity
- no head crash
- low error rate, correctable data
- long life
- random access
- easily transportable
- OS independent file system
- Its multimedia, multiplatform and multi language phenomena.

3. DIGITAL RETRIEVAL SYSTEM

The Internet: It is the world's first digital information utility, an all purpose network that lets anybody send anything digital to anyone anywhere. Without argument, the Internet is the popular network ever evolved. It knows no geographical boundaries. All its growth has come about spontaneously.

The Internet is a cooperative computer network of networks that links libraries, schools, governments, cooperations, individuals and the like to each other and offers vast information resources. Through Internet we can send messages and information in file format to any part of the world by sitting at one place. This of course is a wonderful aspect of digital information system.

4. QUALITY ASSURANCE THROUGH DIGITAL LIBRARIES

Organisations are increasingly replacing conventional storage and network system with digital systems. When we compare the modern technology based systems with traditional systems it is found that the library personnel can render better quality services through digital libraries, this is because there is least burden, and the services are more attractive. Further, we can make use of digital systems in a reasonable time period. As Dr S.R. Ranganathan states in his fifth law of Library Science, "Save the time of the reader". We can do it through digital libraries. Regarding quality, it is always a supplement in timely rendered services. The quality of any document is further assured through its long life. More and more information can be stored in a little space in digital media, thereby it solves the space problems of libraries too. Quality of information in large quantities can be obtained in a quickest possible time.

5. ROLE OF LIBRARIAN IN DIGITAL ERA

Our mission is to work towards meeting the information needs of people. These can be done by providing higher quality information systems which utilise current and emerging information technologies *i.e.* digital technology.

Libraries and information professionals who are not willing to learn the modern technological advances must worry to justify their existence. The basic concept of quality management has to be applied to library and information units for their existence and success. Responsibility, performance and control are as essential for the successful performance of libraries and information service agencies as they are to any other enterprise.[4]

Technology alone can not bring about the required change. The attitudes, practices and policies need to be changed also, if the libraries in India are to benefit themselves and their community of users by the application of new technologies, digital information environment is going to be part of our daily professional activities. In the next couple of years, simply the way we carry out research, teaching and learning is not going to be the same at all.[5]

Since computers do cataloguing now, the librarians who navigate the Internet will only be able to survive. Others will become part of

the history. It you want to be called 'cybernarians' learn to dabble with cyberspace technology. The exchange structure of the digital data types lets you leverage on the information content in the ways you have never imagined before. But exchanging data across platforms requires lots of hard work.[6]

Irrespective of whether we are working in the public, academic or research libraries, multimedia interaction, digital communication and visualisation need to be studied and mastered. This done will help professionals to play a role in the emerging areas on the information super highway.

6. CONCLUSION

It is clear from the above, that quality services can be achieved through digital libraries. Developments in the application of computers in publishing, in e-mail and the paperless office, in computer conferencing and other manifestation of interactive television will allow us to conceive a paperless information system of the future.

Further, the digital libraries serve as pillars of quality assurance as they assure us better services in a speedy way and a longer life of the document is also assured for future generations.[7]

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Evolution of Web University Information Centres: The Perspectives of Innovative Technology

V. VENKATARAMANA AND N. VARATHA RAJAN

ABSTRACT

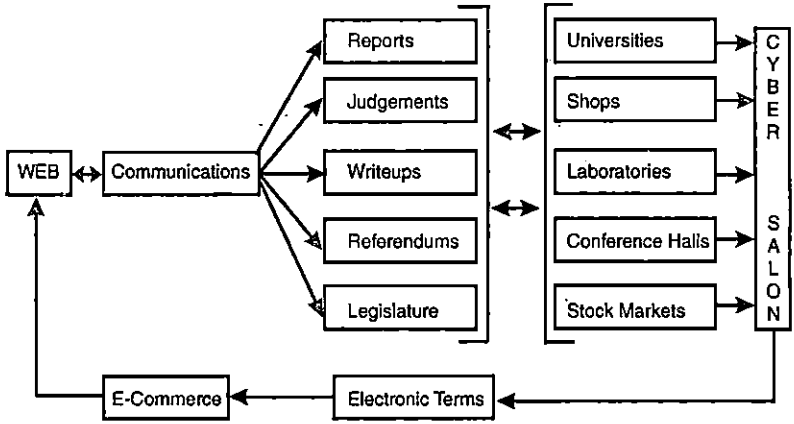
Rapid advances in electronic networks and computer based information systems have given us enormous capabilities to process, store and transmit digital data in most information centres. Organisations are no longer characterised by physical assets but by a network of individuals, who create, process, hold and distribute information. Electronic university and the concept of Webucation have been influencing the higher education system and new directions and novel approaches in learning, research and communications are on the anvil to benefit the mankind and society.

1. INTRODUCTION

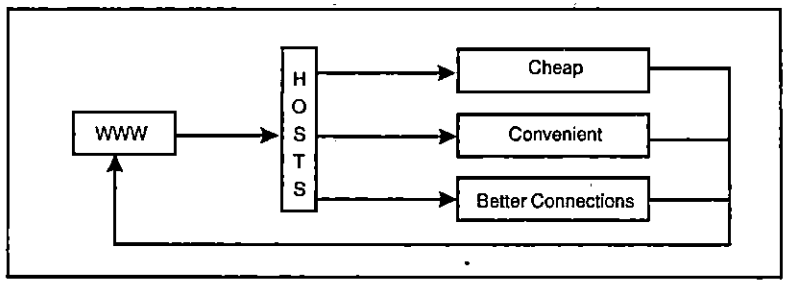
The virtual libraries evolved around the Internet and the websites have transformed into a base for university education "backup services". The Internet evolved into a multipurpose tool for many from the plaything of a few over a time. The Internet democratisation over the globe made the Web—an inseparable quest for a computer user. The father of the World Wide Web (WWW) Tim Berners Lee predicted quite some time back, that the Web would mimic the world and it ends up with the world to a certain extent. In fact, the Web democratised the Internet. All that one has to do is to point and click over the PC to access or contribute to the information and network of cyberspace—a science of systems control and communications through machines over the infinite space. Web empowers its users, its most immediate impact has been to corrode institutional power. The Web power is such that even before the newspaper arrives in the morning,

the reports are read and judgements are passed on over the Web. There are now, over three million plus navigators on the Web. The Web university is now receiving more attention in view of the consciousness revolving around the advantages. The number of e-universities are destined to increase manifold as compared to the conventional universities. Good communication skills, visualisation, creativity, a sociable and calm temperament, tact, and resourcefulness, ability to work under pressure, proficiency at retrieval systems and team spirit are essential ingredients for Web-University Information Centre. In an incompetitive service area—where survival depends on wide ranging service tactics, the information industry logged an unprecedented growth.

Web's Exponential Utility



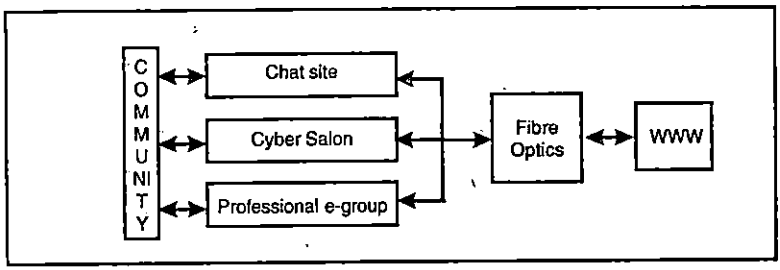
Versatile Web Dynamics



3. UNIVERSALITY

The Web's exponential spread has become possible in a short span of time, because Web can host cheap, convenient and better connected information through various versions of universities, shops, laboratories, conferences etc. For example, the rapid movement of a stock market is dematerialised across the globe simultaneously and without any time lag. The community is being redefined in electronic terms. Even big business, despite its size, does not surpass the Web and invariably chooses to channelise its information. In other words, Web's universality is the midwife to e-commerce. Online markets are accessible, transaction costs are minimal and overhead costs reduced to telephone bills. Entrepreneurship has never been so inexpensive.

Web *vis-a-vis* Community



The Napster controversy is about the Web's erosion of intellectual property rights. The Web is inherently subversive of the music industry's proprietorial interests. Music, followed by the film, software and any other sector whose products can be digitized will be available on the web. The Web does cast shadows. The biggest problem is the 'privacy'. But the Web's benefits are worth the loss of privacy. People will have to start assuming that they have no privacy. Government and corporations are still trying to control the Web. Numerous regimes have tried in vain to block websites or restrict Internet access. China is among the more efficient states, but it still takes its police two months to track down and close a dissident site on the Web.

3. THE WEBUCATION

An elite of university education taught by Virtual lecturers is to be launched next year on the Internet by some of Britain's leading academics. The new Webucation centre will become familiar with teach-

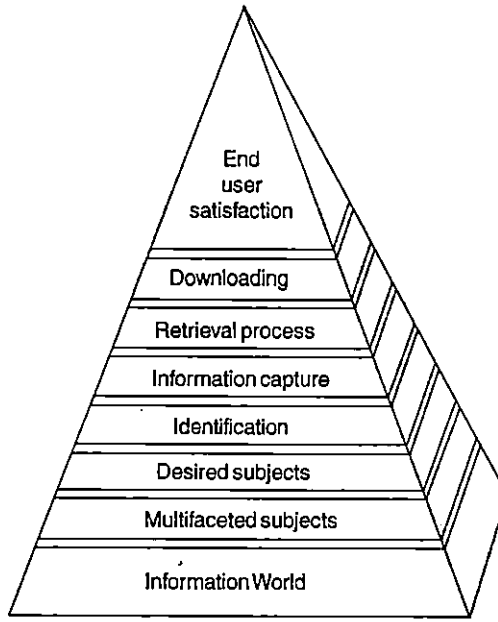
ing the global public via interactive links. The British government also wants to make money out of selling British University Education overseas. Business plans for an official e-university is likely to be announced shortly in Britain. It is likely to issue accredited degrees and will maintain high standards. It is also assessed that research has been undergoing rigorous review by approved academics. It is predicted that e-university is likely to reverse the collapse in the credibility of much of the material in the Internet by introducing a detailed ratings system.

'Eurovestech', a venture capital firm in United Kingdom, is backing an early version of the service already on the Internet and is expected to raise millions of pounds in the next two years. It was devised by three recent graduates of Oxford University and some of the Oxford's best known academics are supporting the venture. But the unfortunate truth is that few lecturers are capable of emulating legendary names, who held audiences captive, often without notes. It is often heard that the modern students are quite different from previous generations and that only visuals can capture their concentration. Many British students already use the Internet to read their tutors' lecture notes.

4. MANAGING CHANGE

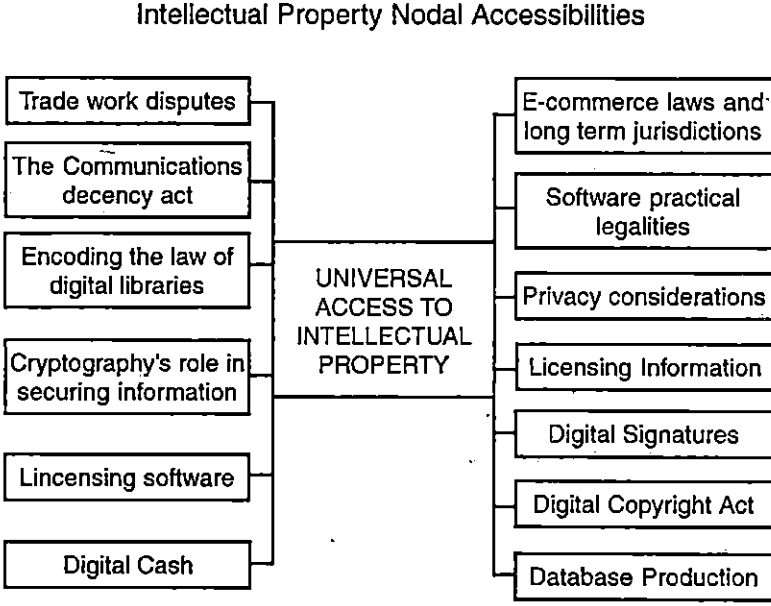
The concept of distance education in India has been undergoing transformation at the hands of electronic education and such acclaimed universities like the Indira Gandhi National Open University have been proving most effective, meeting much of the educational needs of the university education system in India. The lessons are taught through televised channels and audio and video media, much to the benefit and convenience of the student community. The Annamalai University of Tamil Nadu has already initiated e-university system of imparting university education and the Webucation has already taken its shape and many a student have really recognised it as a boon for their educational career. The electronic university system with the advent of technology, paved the most appropriate media to channelise, hitherto subdued information sources into a magnificent potential for exploitation to maximise the benefit for the society. The start of the third millennium is characterised by substantial progress in computing, communications and Information Technology. Cheaper and faster processes, storage and network combined with better user interfaces

Dynamics of Information Precision Process



have now spawned the incredible growth of the Internet and related services. But too often, system complexity, incompatible software or file formats, poorly crafted interfaces and inadequate attention to diverse users lead to confusion, frustration and failure. It is time for the information scientists to take this challenge and prove their effectiveness.

The emerging technology aims at enabling the widest range of users to succeed in their use of technology for information, communications, entertainment, education, e-commerce, community and services. The challenges are many including the diversity of users such as experts, novices, educated, and the biggest challenge being the wide range of technology and the gap between what users know, and what they need to know. The information scientists are interested in research, new systems and technologies, empirical evaluations, policy suggestions and systems that support community services. The diversified user community include researchers, technologists, policy makers etc. Changes in communication and information technologies and



particularly their confluence has raised a number of concerns for the protection of organisational information assets.

5. VISION

Against the backdrop of the electronic age, new organisational structures are emerging. The advent of strong external coalitions are transforming traditional, monolithic, centralised and hierarchical organisations into a loosely coupled organic networks. These organisational forms are characterised by cooperation instead of autonomy and control. Consequently, the structures felicitate intense sharing of information and a high level of interpersonal and inter-organisational connectivity.

Increasingly, individuals and institutions are setting up such 'transnational networks' that pay absolutely no heed to national boundaries and barriers. In order to be more efficient, effective, and responsive organisations give prominence to the use of networks and computer based information systems. It appears that less security is applied to data held in computer systems than is the case for data held in manual systems.

6. CONCLUSION

In light of the turbulent future and the existing competitive trends faced by the organisations, information managers/librarians hold the key to success or failure of a library's/institution's well being. The very role of information manager is evolving – organisations can no longer be interpreted in terms of technical installations and their functionality – but have to be seen in terms of the versatile and utilitarian applications of technology for information channelisation for the advancement of research and knowledge. Consequently the information manager will have to take on the role of maintaining integrity of the organisational infrastructure and not limit into the technical information systems. Facing pressures of organisational cost containment and external competition, many libraries and information centres are rushing headlong into adopting IT but immense care and planning are the essential ingredients before getting on to the information nerve centres. As a service centre, information dissemination has always been influenced by prevailing social and economic trends. Rewards are directly commensurate with the initiative displayed and results achieved by the information scientist. The electronic university and the concept of Webucation have influenced the information potential and thereby it has come to match the higher education demands.

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Information Technology and its Applications in Libraries

B.G. SAKNURE

ABSTRACT

With the introduction of new information technology, libraries are now expected to use various modes of automation to provide information more quickly and in greater volume than before. Information technology is suggested in the context of fourth law of library science "Save the time of the reader/staff" in which Ranganathan recognised an objective relating to the internal efficiency of the library. The paper discusses the impact of Information Technology (IT) on our society and the role played by it in library environment. The IT environment and role of the reference libraries in 21st Century has been discussed.

1. INTRODUCTION

The advances in information and allied technologies are bringing about substantial progressive change in societies all over the world. A new information intensive society is gradually emerging. This emergence has become quite visible in developed countries whereas, there is a growing awareness amongst the developing countries about this revolution. Immediate access to information and its direct and indirect uses for self-reliance and development are the important factors for developed as well as developing countries. The growing literature, the information awareness and the advancement of information and allied technologies have left a tremendous pressure on modern libraries and to cope up with this, libraries have to transform themselves into potential information centres to cater to the growing needs of the library users.

The information needs of academic library users are also changing in this new atmosphere. The demand for quick access to information, efficient document supply and efficient information retrieval facilities and services is the order of the day. Therefore, an effort is made in this paper to project the academic library scenario in a developing economy like India and discuss their role in the context of impact of information technology.

2. OBJECTIVES OF INFORMATION TECHNOLOGY

The objectives of information technology are to provide better means of transmission of data or messages in the form of written or printed records, electric, audio or video signals by using wires, cables and telecommunication techniques. Information technology plays a vital role in information handling due to developments such as reduction in computing time, capabilities of resource sharing, economic storage capacities of files on CDs, use of TV as readymade information screen, telecommunication and satellite communication facilities, etc.

The applications of information technology in libraries and information centres can be categorised into the following:

(*i*) Supporting technical functions associated with technical processing and circulation work.

(*ii*) Supporting information storage, retrieval and dissemination systems.

(*iii*) Supporting management information services for librarians especially analysing library statistics.

(*iv*) It can be used in professional and orientation courses for practicing librarians, continuing education programme for teachers of library and information science, correspondence studies and library extension service, etc.

3. NEED FOR INFORMATION TECHNOLOGY

Information recorded is static unless it is used. The use of information makes it kinetic and generates more knowledge. Thus new science and technology rest firmly on foundation laid by the information generated in the past, effectiveness of future and efficiency of present information transfer. Further the need for technology arose partly due

to the concept of multimedia documents. The conventional printed book is taking up other forms such as microform, sound records/cassettes, computer tapes, video cassettes/films which require special equipment for their processing and partly to meet the requirement of fast and accurate information and its transfer, over long distances.

A book is now available simultaneously on floppy diskette, CD-ROM, magnetic tape, etc. Paperless information centres are fast emerging with the advancement of technology. The benefits like fast and easy access to information, lesser storage space offered by electronic and optical media have attracted the attention of library management.

4. IMPACT OF AUTOMATION ON LIBRARY MANAGEMENT

Computers have made forays into the libraries world over. Almost all the operations in a library can be computerrised to achieve more efficient functioning.

4.1 Book Selection

If the teachers of the college go through the list of books on topics of their interest using the CD-ROM of books IN PRINT etc. they can just mention the required items by going through the screen. The selected items can be printed as a book indent.

It can be sent for sanction to the sanctioning authorities, after which the same records can be used for ordering; when books are received the same records can be used for MARC. Thus from book selection, indent preparation, ordering, they can be used for MARC, saving lot of duplication of manual work which can be devoted to user service.

4.2 Acquisition

On-line acquisition system can facilitate a librarian to approach a bookseller through computer interfacing; browse the books available in that bookshop and order for the required books. The bill for the books will be printed on the printer placed in the library if we need a computer readable floppy edition from the bookshop, the blank floppy disk in the library computer can get a copy of the book in our floppy diskette.

4.3 Cataloguing

When orders are placed from a library to a bookshop using online computer ordering procedure, if the bibliographical details are recorded as per some standard MARC format, the same records can be used for the MARC of the library, after the books are supplied by the book supplier.

4.4 Serials Control

Ulrich's International Periodical Directory itself is now offered in CD-ROM format. According to the 1992 edition of computer readable databases, out of 6,800 databases 30 per cent are available as full text periodicals, over 3,000 periodical titles are available on-line, 330 periodicals are brought out in CD-ROM. Portable electronic periodicals form 11 per cent of the 6.800 databases.

4.5 On-line Access Catalogues

An on-line access catalogue, a computerised database of the holding of Technical D.S.L. Library is available now. The database covers the bibliographic details of 96 thousand books, technical reports, conference proceedings etc. held by the library and can be searched by various access points like author/editor, acession number, keyboard (descriptors), ISBN or report number. It can also be searched by outstation users over a telephone line.

4.6 Union Catalogue of Periodicals in DRDO Libraries

DSL has prepared a union catalogue of periodicals of DRDO libraries; presently data from 40 DRDO libraries has already been covered, a CD version of union catalogue for periodicals consisting of 7000 records is under preparation.

4.7 Information Services

We can offers a wide range of information services to the users. Information services may be discussed under two broad groups—responsive and anticipatory. Responsive services are those that are given in response to requests for help or assistance or for finding answers to specific queries. Anticipatory services are those that are offered in anticipation of demand for a specific type of reference or information service.

5. IMPACT OF CD-ROM NETWORKING

This technology is used to access information from a number of CD based databases. CD-ROM databases on LAN create an information sharing environment that can make one or more databases simultaneously accessible from many workstations. This access can be extended to different departments and different buildings. Advantages of CD-ROM in information storage and retrieval are:

(*i*) Permanent storage (*ii*) High density Storage (*iii*) Durability (*iv*) Portability (*v*) Low Cost (*vi*) Unlimited use (*vii*) Data Protection (*viii*) Personal or library storage (*ix*) No telecommunication (*x*) Ideal for library storage. (*xi*) Networking and data exchange (*xii*) As mass media

On-line access to Internet is useful as a search aid. The advantages are: (*i*) They provide fast and rapid responses (*ii*) More accurate (*iii*) They permit browsing (*iv*) Can be used as a non-delegated search mode (*v*) System has the capability of displaying its own controlled vocabulary (*vi*) Search is wider and exhaustive (*vii*) helpful in multidisciplinary research areas.

6. IMPACT OF COMMUNICATION TECHNOLOGIES

The need to communicate more quickly and more efficiently has become a central focus in our society. The main purpose of communication technology is to transmit information in the form of signals between remote locations, using electrical or electromagnetic media as carriers of signals. The major developments in this area are audio, audio-visual technologies, telex, fax, online search, e-mail, satellite technology, communications etc.

The communication model chosen should be such that (*i*) It is less expensive, (*ii*) Makes use of existing facility and (*iii*) Lends itself upgradation to more efficient models.

Electronic mail/message system (EMMS) is an important service that is supported on computer communications networks. EMMS is suitable for promoting interaction between libraries.

It can store and deliver, with the help of data communication programmes, messages that would otherwise be forwarded by postal service or telephone voice mode. The postal service is slow and messages are liable to be lost sometimes and using telephone lines

requires that the recipient is available to receive the call. EMMS reduces consumption of paper in the libraries. While EMMS costs are steadily decreasing, telephone and postal service and other transport costs are steadily increasing.

The EMMS can be used for

(*i*) Queries regarding journals/books etc. held by another library.

(*ii*) Reference queries.

(*iii*) Database searches.

(*iv*) Inter-lending and document copy requests transaction.

(*v*) Library-vendor communication.

The recent experience shows that the use of electronic information networks for library vendor communication is even cheaper than the conventional postal communication, and of course it is definitely faster.

All the above services when implemented on an electronic information network lead to significant savings in cost.

7. IMPACT OF TELECONFERENCE

Teleconference or electronic meeting is a new way of organising meeting between people who are located on defferent geographical and time locations. There are three different kinds of teleconference. (*i*) Audio Teleconference (*ii*) Video Teleconference (*iii*) Computerised (Tele) conference (C.C.).

Computer conference is a synchronised meeting with typed messages. A member of a computer conference writes messages using his terminal and leaves a message in the memory of the computer system by sending it to a conference.

Thus, conference and conventions can be organised by television which does not require the physical presence of the delegates, who will be talking with each other as if sitting in a single room even though they are at a distance of thousands miles from each other.

8. IMPACT OF REPROGRAPHIC, MICROGRAPHIC AND PRINTING TECHNOLOGIES

The technology of reprography made a big impact on the document delivery system. Most of the research libraries have reprographic machines and provide photocopy of documents on demand.

The microforms will have a great impact on libraries and the world of books will be replaced by the world of microforms.

Using reprographic and micrographic techniques, we can condense the bulky archives and newspapers and solve the storage problems. They also serve the purpose of preservation. They help in resource sharing and save the time of users.

9. CONCLUSION

The impact of new technologies is seen in almost every human activity. The change in the pattern of collection, storage and transmission of information are some of the major challenges in any library. The basic concept in the use of new technology is to free the librarian and information officer from the routine jobs connected with library operations in acquisition, classification, cataloguing, circulation control, serial control, etc. which can be entrusted to computer.

In this age of information, easy access to information is an essential prerequisite for the development of a country and, hence, the Third World countries like India should make earnest efforts to concentrate more on developing and using new technologies that provide better access to information.

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Internet-based Qualitative Information Services*

S.K. TANEJA AND RAJEEV VIJ

ABSTRACT

Today, the Internet makes it possible for the Indian librarians to introduce information services that fulfil the information needs of the users in almost any subject area. This study identifies a few important bibliographic and full text databases associated with the Internet. It discusses unique characterstics of Internet-based library and information services and describes the methods, techniques and guidelines for implementation While listing the advantages and disadvantages of Internet-based information services, the paper suggests that there is an imperative need to equip the library professionals with all the needed knowledge, skills and capabilities to handle this new IT invasion in LIS profession, to enable them to make the best use of the Internet resources and to perform new and challenging information delivery roles.

1. INTERNET – THE FASTEST GROWING INTERACTIVE MEDIUM

The need to keep abreast of new developments has been recognised for a long time. Internet gives access to world's largest sources of Information—speedily, efficiently and with guaranteed results. Internet is a network of networks that connects hundreds of thousands of computer networks worldwide. Participating computer systems (called nodes) include PCs, local area networks, databases and mainframes. The Internet connects thousands of computer networks in more than 200 countries, enabling people to access data in other organisation and communicate and collaborate around the world

*The views expressed in this paper are of authors' only; DESIDOC does not assume any responsibility for the opinions/statements expressed by the authors.

quickly and inexpensively. Thus, the Internet has become a necessity for librarians and information scientists.

Five years ago, on 15 August 1995, the Internet connections for public in India were launched by the Videsh Sanchar Nigam Limited (VSNL). The Internet-based resources and services, such as e-mail, ftp, http, bulletin boards, mailing lists, scholarly discussion lists, computer conferences, electronic journals, digital databases, and various browers and search engines have a strong potential to provide massive access to worldwide resources to one and all. It is now commonly accepted that the Internet is the key to important sources of information.

2. TECHNICAL REQUIREMENTS FOR SEARCHING INTERNET SITES

The users should have a reliable and efficient connection to the Internet through the Mac, PC or an UNIX workstation or institution's network connection; a standard Web browser such as Netscape Navigator or Microsoft Internet Explorer (3.0 or better, or both) and Adobe Acrobat reader to view PDF articles. The Adobe Reader is available for free download from the Science Direct or Adobe Website and operates as a standard browser plug in.

3. IMPLEMENTATION OF INTERNET-BASED SERVICES

Information services on Internet keep the users continually informed about new information in their fields of interest, though citations sent to the individual's e-mail address, or by Fax. Internet address-based services can be broadly divided into five step procedure.

3.1 Databases

A wide range of databases can be scanned, which include bibliographic databases, table of contents databases, full text databases, etc. Some of the important information services providing Internet sites are:

3.1.1 BLDSC: The British Library Document Supply Centre

Its services include:

- Articles Direct—services for persons having an occasional need for documents

- Inside Web—current awareness and document ordering service on the Web
- Patent Express—Document supply, translations and alerting services for patent information
- Current awareness services—inside serials, inside conferences—article and paper title databases
- Inside Alert—e-mail table of contents service
- Conference Profiling—forthcoming conference database (URL:http://bids.com/blii.html)

3.1.2 BUBL Information Service

It is catalogue of 12000 selected Internet resources including 200 full text journal titles. (URL:http://bubl.ac.uk/)

3.1.3 DTIC's Products

Its important products are: Automatic Document Distribution, Automatic Magnetic Tape Distribution, Current Awareness Bibliography, Current Research Summaries, Hot Topic Bibliographies/Documents, and Technical Report Awareness Internet Links. Its new services are Dissertation Authority List (DAL), Secure STINET, Public STINET and Web-enabled DROLS. (URL:http://www.dtic.mil/)

3.1.4 EBSCO Publishing

Full text databases are available online via EBSCO host and via CD-ROM besides Internet. It provides access to indexes and abstracts from over 30 of the most popular library trade journals. Its highlights are:

- Produces indexing and abstracts for over 4,000 publications
- Produces full text for over 2,000 publications
- Developer and producer of nearly 60 proprietary and over 20 reference databases
- Creator of over 1,000,000 abstracts annually (URL:http://www.epnet.com/ire.html)

3.1.5 OCLC Products

Like ArticleFirst, ContentsFirst, NetFirst, PapersFirst, InterCat, Fred and PURL are available on this site (since 1990 to the present). Updated daily. (RRL:http://www.dla.ucop.edu/dlaweb/jrnl.html)

3.1.6 Bell & Howell Information and Learning (formerly UMI)

Its information related services include:

- ProQuest information service.
- Dissertation Abstracts
- ProQuest, online information system
- ProQuest databases on CD-ROM
- Digital Dissertations (URL:http://www.umi.com/hp/products/pqdintro.html)

3.1.7 ISI Services

ISI products include the ISI Web of Science, a unique multidisciplinary bibliographic database that offers Web access to over a half century of the world's most influential information. It includes three Citation Databases: *Science Citation Index Expanded, Social Sciences Citation Index*, and *Arts & Humanities Citation Index* and covers approximately 8,5000 scholarly journals annually. *The Web of Science* also provides links to the full text of journals and chemical, patent, life science and proceedings literature. Released less than three years ago, this innovative Web-based resource is being used by over 3.5 million researchers and scientists worldwide.

ISI also publishes *Current Contents Connect*, a current awareness database that is available via the World Wide Web and provides daily updates to over 8,000 scholarly journals and links to selected Web sites and pre-print servers. Its other services are:

A. Table-of-Contents Alerting

Journal Tracker
Corporate Alert

B. Profile-Based Alerting

Discover Agent
Personal Alert

C. Patent Information Products

ISI and Derwent Information have combined to produce a Web based patent information tool that couples key patent data with a powerful search interface.

Key Capabilities

- Creates a powerful research environment that helps users stay up-to-date in their specialties
- Provides a complete picture of today's global research by combining comprehensive coverage and numerous access points with 24-hour Web access
- Saves research time by providing single source for a variety of research data including author abstracts, author addresses, and more information per bibliographic record than in other resources
- Internet-updated weekly (RRL:http://www.isinet.co./prodserv/ru/ru.html)

3.1.8 ScienceDirect Web Editions

It is a Web database for scientific research that contains the full text of more than 1,100 Elsevier Science journals covering over 2 million pages of scientific information. ScienceDirect Web editions is an online current awareness service. It provides users with online access to the issues of preceeding twelve months of subscribed journals on a rolling basis, complementing the print journal subscription, at no additional cost. Users can: (*i*) browse the list of subscribed journal titles; (*ii*) link to Tables of Contents; (*iii*) view and access article abstracts; (*iv*) view and print the full text of articles; and (*v*) use journals concurrently through easy desktop access.

Key Capabilities

- Online access to ES journals—wider availability of journal information
- One interface for titles—reduces learning curve and support questions; saves staff time
- PDF and HTML formats—common and familiar formats
- Most recent journal issues—saves time looking for recent information
- Sophisticated journal navigation bar—saves time finding journals and browsing titles
- Online help—immediate help from system; saves staff time
- Browsable table of contents—provides current awareness of the most recently published articles.

Pros

- Links to full-text articles published by Elsevier Science.
- Searches are run against a subset of the Embase database.
- E-mail alert option: search will be run automatically on a weekly or daily basis with results delivered via e-mail

Cons

- Citations cannot be imported into bibliographic management software.
- Searches are by keyword or by the tables of contents from current journals. (URL:http://www.elsevior.nl/)

3.1.9 Uncover Web 2.0

UnCover is a database of current article information taken from over 18,000 multi-disciplinary journals covering over 8,800,000 articles. It allows table of contents delivery and keyword searches performed weekly, however, it does not include abstracts.

A. UnCover Reveal is an automated alerting service that delivers the table of contents of periodicals directly to your e-mail box. The Reveal service also allows users to create search strategies for their favorite topics.
B. UnCover SOS is a level of document delivery created for users who simply want to forward orders to UnCover. SOS continues the tradition of responding to customer needs and providing the most innovative, automated and efficient document delivery available anywhere.
C. Subject Lists, Title List, and New Journals List. UnCover provides with easy to download copies of complete Title List along with a variety of Subject Lists broken out by different areas of interest. One can also see a list of the New Titles added to the database along with journals that have changed their name. These lists are updated monthly. (URL: http://ucweb.carl.org/reveal/)

3.2 Searching

Most of the above stated databases can be searched in traditional way using Boolean logic, however, some of the databases such as ISI can only be searched by using users profile. Corporate Alert is also one of such services.

3.3 Notifications

Most of the data is transferred to users e-mail address electronically. In some cases, such as, *Sciencedirect*, it is searched manually, while in case of *DIALOG* it is through an alert. Experienced searchers create as many Alerts as you need, on Dialog, DataStar or Profound. Its highlights are: (*i*) alerts are set up by expert searchers using in-depth database knowledge; (*ii*) fast turnaround, no matter how complex is the enquiry; (*iii*) unlimited number of Alerts; and (*iv*) it is a free, easy and fully confidential service.

3.4 Document Delivery

Internet offers a fast and responsive document delivery. In a majority of cases, information is supplied directly to the user's e-mail box, but in some cases like that of *BLDSC* and Uncover it is sent to user through Fax or Post.

3.5 Feedback

Most of the providers of information on Internet also include an online services evaluation form, which is used to get useful feedback from the users, to enable the service providers to provide users with pinpointed information efficiently.

4. ADVANTAGES & DISADVANTAGES OF INTERNET-BASED SERVICES

These web-based information services allow the users to keep abreast of the latest information on a particular research topic. Some advantages and disadvantages of such services are listed here:

4.1 Advantages

- Helps in keeping users better informed in their respective fields of interest by providing access to comprehensive databases containing current, relevant and specialised information
- Automating the process of searching publications and retrieving relevant information, and thus saving time input and money
- Links to publishers' sites for full-text journals.
- Subject heading browser can be used to help set up search strategy
- Multiple searches may be entered

- Providing references in a preferred format for reuse.
- Results can be downloaded into reference manager or EndNote
- Simplicity of operation, user friendly
- Search will be run automatically whenever database is updated
- Search will be delivered to an e-mail box of the user's choice
- Search parameters include subjects, authors, journal titles and addresses
- Documents can be requested electronically
- Reusable

4.2 Disadvantages

- Poor communication links via 33.6kbps modems (USA has 126 Kbps modems)
- Costly hardware
- Lack of organisation of information on Internet
- Lack of reliable information
- Quality of information is doubtful
- Some sites have no real content
- Too much of Information
- Information does not always come free
- Not all sites are updated regularly
- Software used is not interchangeable
- Lack of security
- In many cases searches must be run manually
- Results cannot be limited to most recent update
- Citations cannot be imported into bibliographic management software
- In some cases (OVID) one cannot order documents electronically
- In PORPOISE (CIT) subject must use free text from title abstract or author-provided keyword list

5. ESSENTIAL SKILLS IN INTERNET SEARCHING

The information explosion and growing demands from a wide range of LIS users for authoritative, validated and value-added information are very important factors having considerable ramification for the development of LIS profession. Internet offers numerous possibili-

ties for keeping track of new developments and keeping up-to-date in a rapidly changing environment. As most of these services can be easily used by anyone with Internet access, information specialists have a golden opportunity to secure the position in the information world by providing their users with Internet-based qualitative information service.

Whatever the future holds, most of the information professionals remain cautious about psychological, operational and organisational barriers of the implementation of Internet. Internet-based services will certainly not negatively impact their jobs. Such services will not only educate users of the value of such services, but at the same time will help to push the information professionals' job up the value chain. There is, therefore, an urgent need to upgrade library science curriculum and existing continuing education programmes by including Internet training.

6. CONCLUSION

The exponential growth of knowledge and increase in the number of documents suggest for exploitation of Internet for providing qualitative information services to the user.

There are a host of information services available through Internet. These can broadly be described as (*i*) Table of Contents Service (ieee.com and sciencedirect.com); (*ii*) Book Alerting Service (amazon.com and cambridge.com); (*iii*) NewsWire Services (yahoo.com and excite.com); (*iv*) Electronic Newsletter Services (currentcites.com and online.com); (*v*) Newspaper Services (indiaheadlines.com and timesofindia.com); and (*vi*) Patents-related Services (patent.womplex.ibm.com and patentexplorer.com).

Most of these services, as on today, are available free of cost. Some of these services provide automatic notification via e-mail, while others require users to visit their site and "order" for specific information, which is then sent by Fax to the user within two hours on payment. The library staff should train themselves in identifying databases and to compile a directory of Internet databases (site addresses) for future use. There is therefore an imperative need to equip the library professionals with all the needed knowledge, skills and capabilities to handle this new IT invasion in LIS profession to enable them to make the best use of the Internet to perform new and challenging information delivery roles.

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Management of Quality in Collection Development of Electronic Resources

SUMMIT KUMAR MANNA

ABSTRACT

The measurement of quality is very much difficult in a service sector like Library and Information Centre. Today, Internet has added a new challenge to this dimesion. Now documents are available in a new format and new style. This paper tries to find out some parameters that can be used to measure "Quality" of Library and Information Centres, and their collection development policy for e-resources alongwith some of the challenges for Web documents.

1. INTRODUCTION

The sole objective of a Library and Information Centre is to provide right service to the right user at the right time with right personal assistance. In this direction libraries' collection should include right information that can solve users' ultimate needs and latent needs. The major functions of collection management in Library and Information Centres are planning and policy making, collection analysis, materials selection, collection maintenance, fiscal management, user liaison, resource sharing and programme evaluation. Electronic forms of documents should include those on CDs, machine readable format and Web documents.

2. COLLECTION DEVELOPMENT POLICY: DEFINITION

According to Magrill and Hickey "Collection development includes assessing user needs, evaluating the present collection, determining

selection policy, co-ordinating selection of items, weeding and storing parts of the collection and planning for resource sharing". So collection development is a sum total of all these activities.[1]

According to McClure, definition of Internet-based collection development is "Identification, analysis, selection and organisation of information resources from the Internet which are made available to library's clientele".[2]

3. QUALITY IN INFORMATION SERVICE

In library and information sector quality is proportional to the user's satisfaction. But there is no exact parameter to measure users' satisfaction quantitatively. This is a genuine problem in all service sectors. In Library and Information Centre it has aggravated because the need of the users varies along with a change in space and time. Therefore users' satisfaction cannot be quantified.

4. APPROACHES FOR MEASURING QUALITY

Although it is very difficult to measure the quality in information service in Library and Information Centre, still there are two major approaches to measure it.

4.1 Qualitative Approach

This approach is generally expressed by the user, its parameters are:

(*i*) popularity of a service,
(*ii*) demand for more copies of the same document, and
(*iii*) variety of collection.

4.2. Quantitative Approach

This approach can be countable. Some of the parameters that indicate quantitative approaches are:

(*i*) number of users,
(*ii*) amount of collection, and
(*iii*) circulation statistics.

4.3 Features of Electronic Resources

Electronic resources contain multimedia components. Since time between generation of information and its publication is very minimum, amount of secondary sources is very low.[3]

5. COLLECTION DEVELOPMENT POLICY FOR ELECTRONIC RESOURCES

Electronic resources are very distinct from traditional resources. For collection development of electronic resources collection evaluation is needed. This can be possible broadly in two ways.

- Materials centred approach
- Use centred approach

5.1 Materials Centred Approach

There are different methods for this approach. Some of these are:

(*i*) Help through subject expert,
(*ii*) evaluation through different standard lists and bibliographies,
(*iii*) citation analysis, and
(*iv*) standard adopted by different professional bodies.

Each of these methods is self-explanatory.

5.2 Use Centred Approach

In this approach the quality of a library is judged by the extent to which it is used. Although it is very difficult to measure and evaluate the use of the library, still some methods exit for this.

5.2.1 Circulation Statistics

Although this method has some drawbacks, yet it can identify which information source is used more.

Above all, there should be an evaluation of present collection and proper planning for addition. There are numerous documents available today in electronic form. Library and Information Centres have to evaluate these resources and then plan accordingly.

6. CRITERIA FOR EVALUATING ELECTRONIC RESOURCES

In order to know the authenticity and quality, librarian has to evaluate electronic resources constantly. The traditional criteria to evaluate print information, *viz.* accuracy, authority, objectivity, currency and coverage are also applicable to electronic resources. It is true that anybody can put any sorts of information as electronic information, so the quality must be examined properly.

Some of the parameters to evaluate electronic resources are:

6.1 Accuracy

- Check whether the information is reliable or free from error,
- Check whether the information is checked by editors or not.

6.2 Authority

- Check whether there is an author or not,
- Check whether author's qualification is given appropriately
- Check whether institution is renowned or recognised.

6.3 Objectivity

The goals/aims have to be stated properly. The information resource should be free from bias.

6.4 Currency

Information resource should be correct and recent and properly dated.

6.5 Scope

Scope of the documents should be mentioned clearly. Type of document, subject content should also be mentioned.

6.6 Format

Format of the document should be stated clearly. If it needs help from some other package like Acrobat Reader to open, that also has to be mentioned.

6.7 Updation

Periodicity of updation and date of last updation should be mentioned.[3]

7. CHALLENGES OF WEB DOCUMENTS

There are a number of challenges regarding Web documents. Some of these are:

7.1 Accessibility

To access Web documents suitable hardware and software are needed. Sometimes, suitable training programme is needed.

7.2 Announcement Mechanism

There should be a suitable announcement mechanism for each and

every Web document in the form of directory, so that user can be aware of particular Web documents.

7.3 Cataloguing

How to catalogue Web document is still a problem for the librarian.

7.4 Acceptability to the Scientific Community

The scientific community still prefers to publish their article/research work in journal that publish in print version. This will help them in getting academic advancement, but Web documents have not achieved this so far.

7.5 Preservation and Accessing of Back Issues

Preservation of back issues is still a problem, because the hardware and software needed for this generally gets obsolete soon. Library and Information Centres are entitled to get back volumes any time which were subscribed once in the past, even if future subscription is stopped. But in case of Web documents one has to pay charge to get password to access old issues which were subscribed.

7.6 Optimum Readability

Due to resolution problem and sometimes because of screen size a reader has to scroll the screen frequently to read a full page. This often detracts the attention of a reader while reading a Web document.

7.7 Cost Factor

In case of Web document printing, binding, transporting and mailing are not needed, so it should be cheaper than print version. But in reality this is not true. So exact determination of its price is a challenge for the Library and Information Centre.[4]

8. CONCLUSION

There should be a proper plan to include electronic resources in a Library and Information Centre's collection . In India IT is very much under-used by libraries due to lack of proper knowledge and infrastructure, etc. Information professionals will be able to handle and manage electronic information resources provided they improve their professional competencies with the help of scientific, methodologi-

cal, managerial and economic skills. The electronic information resources can replace print collection, but it will take some more time to achieve this. The challenge for today's Library and Information Centres is to manage electronic information resources with the help of new technology.

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Pillars of Quality Assurance in Academic Library and Information Services

S.B. PATIL AND SURESH JANGE

ABSTRACT

The papers gives a brief account of quality assurance and its trends in the changing environment of present society and explains, why the word 'Quality' is getting more importance in all fields with special reference to library and information services. Quality assurance attempts to provide quality based materials and services available in the library or information centres. It describes various shortcomings in monitoring the current services of academic libraries and discusses important steps which can stand as pillars in achieving quality assurance in the context of Indian academic library sector.

1. INTRODUCTION

Quality is what today's competitive society is forced to build for survival irrespective of area in science and technology, industry, commerce, health and education, right from common item of everyday use to extremely complicated equipments and components used in nuclear reactors.[1] The pace of growth has been more sustainable in developing and industrial countries as they pay attention to the quality attributes of the growth process.

As we move towards twentyfirst century, on one hand there are negative factors like population overload and information explosion, while on the other side we see considerable increase in the standard of living and people are getting more information conscious than ever

before. This has led to greater demand for quality based products and services. Due to the globalisation and free trade culture, the competition is getting more challenging and unless the products and services are of international standards and quality, their survival in the economy is ruled out.

Education system and government policies play a significant role in achieving quality in various fields. The present education system in India needs to be given big push with emphasis practical approach. The policies of the government which do not show any sign of quality improvement have to be reviewed and revamped towards TQM philosophy.

For the past many years, the question of quality particularly in Library and Information Services (LIS) had not arisen as popular jargon. But recently we are rather forced to discuss, conduct conferences, workshop to implement Total Quality Management (TQM) in LIS activities. It reveals one thing very clearly that the quality consciousness in LIS is spreading. Library and information centres need to explore and strengthen their activities using TQM philosophy in the light of five laws of library science. TQM is defined as betterment of all activities that satisfy the customer demands in achieving objectives of organisation in a cost-effective way.

Library and information professionals have realised the significance of 'Customer Care' in TQM philosophy. According to John Hinks, Deputy Director of Leicestershire Library and Information Services, customer care at its simple sense is an approach that puts the customer first in planning and designing of services. At its best it strives to open a dialogue between service provider and customer. To achieve quality control in information activities and services, standards play a significant role, laying down the minimum requirements for quality assurance, rationalisation, productivity and acceptability of information services to the user community.

ISO 9000 standards originally evolved for quality management systems for manufacturing units were later extended to service and software fields. And as such library is not an exception to it. In India, Indian Institute of Technology, Chennai is the only library to be certified ISO 9001 compliant for its exemplary service and management in library and information science.

2. LACK OF VISION IN QUALITY OF LIBRARY AND INFORMATION SERVICES

The history of library and information services in India is not very old. That also might be one of the basic reasons for tardy development of library system in India, as compared to western system. Dr S.R. Ranganathan, made had tremendous efforts to develop and shape the library system in India. He is a legendary figure in the history and development of libraries in India. But unfortunately same spirit of development has not been continued.

We the professionals speak so much about library development, automation, quality based services but in practice much more needs to be achieved. When we think from academic point of view, many universities do not have university librarian, somebody other than a library professional is heading the library not only in colleges or universities but also in reputed institutions of national importance like BARC. So the status itself is yet to be established, therefore, the question of speaking on quality, quality assurance, quality based services, especially for academic libraries becomes secondary. The services which are being offered by the present libraries are not up to the quality standards as required and demanded by the changing society.

3. SHORTCOMINGS FOR QUALITY BASED LIBRARY AND INFORMATION SERVICES

The role of library in the educational process cannot be under estimated at any level, especially in the academic field which aims at the overall development of students including their personality, skill, communication, career, creativity etc. But how much importance do we give to such an indispensable constituent of the academic field?

The quality of education is greatly linked to libraries. The information collected and disseminated by libraries does influence the quality of teaching-learning process in any field. Several commissions that were constituted in the past to recommend academic and educational reforms have underlined the importance of library services. There are number of shortcomings which have hindered the quality based services. These can be listed as:

- lack of systems approach;

- lack of administrative correlation;
- lack of time consciousness;
- lack of service attitude;
- lack of knowledge in the new methods and technologies;
- lack of updated training to serve the emerging new categories of users;
- lack of infrastructure facility for meeting new categories of information with emergence of new disciplines and interdisciplinary subjects; and
- traditional management style.

Though there are many other shortcomings, the above listed are considered to be major among them.

4. PILLARS FOR ACHIEVING QUALITY IN LIBRARY & INFORMATION SERVICES

In order to assure quality in LIS, the following measures will act as pillars for quality assurance in the library activities and services.

4.1 Planning and Designing of Library Services

Why the present libraries are failing in extending better services to their users is basically because of improper planning and designing of their services. Since planning is the first and the most important step to be undertaken for successful library services, it should not be neglected at any cost.

4.2 Adopting Uniform Standards

Standards are basic foundation that ensures yesterday's mistake are not be repeated and job shall hopefully be executed in a better way. There are the guiding factors to foster quality and improvement. These standards should be set for each and every set of library activity and services *viz.*;

4.2.1. *Functioning Unit:* This pertains to collection development, organisation, maintenance, circulation, serials control and administration, documentation work etc.

4.2.2. *Processing Units:* Identifying, selecting, acquiring, accessioning, passing bills for payment, classification, cataloguing etc.

4.2.3. *Standardised Job Description:* Duties and responsibilities for

both professionals and non-professionals in the library should be defined alongwith nature of job. Individual should be made accountable for the work assigned.

4.3 Education and Training

New entrants to the library profession need sound educational background in library and information science with an inclination to practical approach so that they can face the challenge in reality. Since the library schools teach more of principles than practice, it is therefore necessary to explore and redesign the curriculum structure in LIS institutions emphasising more on practical aspect of education. On job learning opportunities for staff like attending seminars/workshops/ training programmes refresher courses/orientation course should be organised to keep track of latest developments. Industrial and commercial houses offer inhouse training at regular intervals that will not only increase efficiency but also boost' morale of the staff. Training for librarians at regular intervals is not only necessary but also essential especially in this technological environment for providing quality based information services to the ever changing demands of user community.

4.4 Financial Provision

Finance is considered as a life blood of library activity and services that has large bearing on quality assurance efforts in LIS activity. For carrying out each and every activity right from collection to dissemination, finance is required. Inadequate financial provision will hinder the development of library and as such adequate financial provision be made available to the library. Efforts have to be made to raise finance through donation, endowments, information marketing, information consultancy services etc.

4.5 Team Work Culture

The philosophy of team culture in the library should be encouraged common cause. TQM is possible in library if all the staff actively promotes and works in team spirit in providing information services, solving the problems and strives for continuous improvement in services to meet complex needs of the users. Majority of university libraries in India suffer a lot due to lack of cooperation and co-ordination among staff which acts as a major hurdle in achieving the common

goal. Until and unless the library staff develops a sense of working in team spirit under one umbrella, the TQM in libraries will remain a distant dream for libraries.

4.6 Management/Administration Role

Management plays a significant role in extending the library activities and services to the user community. As such, library expects positive support from parent body *i.e.* management/administration department in all the matters concerning staff, finance, innovative ideas and projects. Although library is considered as heart of university campus and temples of learning, yet in practice it encounters a lot of inadequacies in resources. Library is given least priority and this becomes demotivating factor for library professional to work. In view of this, management support is imperative to develop facilities for carrying out excellence in service to the user community.

4.7 Strict Evaluation

Efficiency of the system can be improved significantly by conducting strict evaluation at regular intervals whatsoever the system may be with a view to identify strength and weaknesses for improving further. A mandatory effort be made for libraries to evaluate at regular intervals performance of the staff, collection development and effectiveness of information services. It is observed that majority of libraries hardly evaluate their products/services. Even the evaluation studies are conducted by research scholars in partial fulfilment of research degree which is far from implementation. This attitude will certainly restrict libraries from assuring quality based services.

4.8 Human Resource Management

The approach to successful quality management is centred on human factor *i.e.* library staff, their commitment, dedication and leadership style. The casual and passive style of working in library should be changed to more active, specific, mission-oriented and dynamic approach for their visibility and survival. According to Decotiis and Summers[2] have there are a number of processes which impact upon commitment.

- Leader behavior in relation to subordinates.
- Social involvement.
- Challenge, responsibility and influence offered by job.

- Participation in decision making
- Open communication.

The library staff should be able to adapt to the changes as and when warranted for the improvement of services especially with the technological era having greater impact on libraries. The entire gamut of quality assurance rests on human resource, their attitude and willingness to provide effective and efficient services.

4.9 Users' Role

Last but not the least is users' attitude, perceptions and role in achieving quality assurance in library. Users should help in maintaining the system of the library. They should not always view the library from negative view point rather they should come up with solutions to the problems encountered in the library. It has become a habit among users including library science professionals to betray an indifferent attitude towards library which also hinders the qualitative progress of the library. It is also important that there has to be regular feedback from users about the library services that will help in improving the services and decision making of library.

5. CONCLUSION

There is no disputing the fact that quality based services are *sine qua non* for development of libraries not just to meet the complex needs of users but also for their survival. The library professionals should be competent to carryout any challenge in implementing and assuring quality in library activities and services. They should be fully commited and dedicated to work in team and should be supported fairly by management and users as well in achieving the dreams of library as a real, practical and visible profession in the eyes of society.

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Quality Assurance and Quality Control in Developing Library Management Software/Systems

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ABSTRACT

The features of library software, especially the user-interface and search speed are analysed in the light of the quality aspects of software development in this paper. The quality paradigm set in pace for software development is also discussed to trace out possible implementation by library software developers to enhance the quality and usability of the products.

1. INTRODUCTION

Quality expert Crosby defines quality as "conformance to requirements".[1] Quality may be seen as "the total composite product and service characteristics of marketing, engineering, manufacturing, and maintenance thorough which the product and service in use will meet the expectations of the customer".[2] The word control denotes an active role where as assurance stands for confidence, an attitude. Hence quality assurance defines how an organisation aims to achieve quality, while quality control ensures that quality assurance procedures and standards are accepted in various development activities. Arnold and Holler listed the different responsibilities for quality assurance as:[3]

- Review quality related records, qualifications and training of personnel

- Develop, document, and implement quality procedures
- Schedule, conduct and follow up internal and external (outside the firm) quality audits
- Involve in the procurement and design review cycle
- Schedule and conduct surveillance of vendor, process or program, and records

Some of the activities to be considered in regard to quality control are:[3]

- Establishing parameters for product evaluation
- Qualifying and training personnel
- Reviewing and retaining records and analysing data
- Reviewing and following up corrective action taken reports
- Performing special tests and inspections

Due to the difficulty in properly quantifying quality and implementing it in different projects, quality management is treated as a separate entity from project management and the views of quality team are considered at all stages of project development. Since software development is a creative rather than a mechanical process, most of the time the efforts are influenced by individual skills and expertise. Such person-dependent projects always ends in non-repeatable software products and hence the emphasis of a development firm should always be on repeatable quality intrinsic software development. Other problems consonant with software are the peculiar difficulty to separate it either as a product or process as the programs essentially perform some processes on operation. Other problems are the intangible nature of software and the difficulty to manage the raw materials consumed like data (dependant on the problem concerned) and computer systems (biased by the infrastructure of the developing or target institution). Our survey of the published literature revealed that though there are extensive works done on software quality[4-11] and library software[12-21], there are not many focussed works on library software quality[22-24], and they are almost nil in the Indian context. This paper will thus stress upon an active discussion about the crucial aspect of instilling quality in the development of library software/systems.

2. SOFTWARE QUALITY

The software life cycle model suggests the different phases in a soft-

ware development project as, requirements specification, system and software design, implementation and unit testing, integration and system testing, operation and maintenance.[4] There are two ways to represent quality factors in software development, one is the ISO 9000[5] and the other one is the Capability Maturity Models (CMMs) practiced by the Software Engineering Institute of Carnegie Mellon University.[6] Reliability of software is often measured by how often it fails. Software quality is the aggregate of all those attributes that will enable the software to perform its intended use.[7] There is a saying that like beauty, quality is in the eye of the beholder and hence the different people involved perceive it differently. In the case of software, for the developer, it has to be free of defects; for the buyer, it should meet all the specifications; for the maintainer, it has to be understandable, testable or modifiable; and for the end user, ease of use may be the prime concern.[7] Some of the most popular approaches to achieve quality in software development are through:[7] software quality assurance, independent verification and validation, audits, quality metrics, modern methodologies, use of programming languages like Ada, software quality evaluation tools, software quality standardization, trend data analysis, reliability growth modeling, and design/code inspection. In the case of software products, the quality should be measured on three levels, that of design, code and document. A high-quality code has to be understandable, consistent, and complete; efficient, fault-tolerant and traceable; separately compilable etc. Similarly, a high-quality design has to be modular, simple and technically adequate, and a high-quality document should be easy to use and accessible with an accurate representation of the design and code.[7]

2.1 Quality Attributes

To deal with the various functionalities of software, certain quality attributes are devised to cater for the various user needs:[7, 8]

(a) User Need - Functional

(*i*) Integrity: How much secure is it? (*ii*) Reliability: How often it fails? (*iii*) Survivability: Can it overcome failures? (*iv*) Usability: How easy to use it?

(b) Performance

(*i*) Correctness: How the software complies with the requirements?

(*ii*) Efficiency: How much resource is consumed? (*iii*) Safety: Does it prevent hazards?(*iv*) Interoperability: Ability to interface with other systems

(c) Change

(*i*) Expandability: How easy to scale up the software? (*ii*) Maintainability: How easy to repair it? (*iii*) Flexibility: How easy to change it? (*iv*) Portability: How easy to transport it? (*v*) Reusability: Is it reusable in other systems?

(d) Management

(*i*) Manageability: How easy to manage it? (*ii*) Verifiability: How easy to verify performance? (*iii*) Understandability: Is the source code easy to read?

Another important aspect going on the rounds is about Total Quality Management (TQM) and some of the measures arrived as a result of this new thinking in management are very much imperative for a service institution like library. Some implications of TQM in library software will be elaborated in the latter part of this paper.

2.2 How to achieve it?

There are three basic ways to achieve software quality viz., by testing for errors, by reviewing for defects, and by engineering quality.[7] Testing can be done only after the specification, design and coding phases, where the software is vigorously tested to see whether it fails using simulated data. In dynamic testing, a program is tested and the results thus obtained are analysed. Static analysis is the systematic examination of program structure to show which properties is true irrespective of execution path.[9] Reviews are made on design and code manually by checking for compliance with standards and specifications. Software that is not maintainable will not improve merely by testing and certain levels of reliability can not be achieved by review.

2.3 Cost of Quality

Slaughter *et al.* assessed software quality costs as the sum of conformance and nonconformance costs.[11] Conformance costs cover the initial and ongoing expenses for software quality initiatives, baseline configuration management, design reviews, system-level testing, and quality assurance audits. Nonconformance costs include software

debugging, configuration management migrations of software fixes, regression testing, operations support for retesting, and additional audits and reviews due to defects.

3. LIBRARY SOFTWARE

Libraries existed here for centuries without automation, but as technology emerged in the world at large, libraries embraced these tools as a means to avoid some of the menial tasks inherent to managing large collection.[12] Now a days, like other service institutions, libraries are also using different software for meeting the various house keeping tasks as well as to provide information services. Indian libraries are convinced of the need of computer applications with the help of sophisticated software to achieve state-of-the-art library organisation and information services. Good software for library applications would be easy to learn and use, well explained in printed manuals and on-screen help messages, fast and efficient at performance, flexible and malleable, compatible with other software products, and have value for cost. But in the context of many software systems and few libraries to purchase them, careful purchasing decisions are needed. The ABCs of arriving at a computer-based solution to a problem are definition of the problem, selecting software that answers the need, and selecting hardware that runs the software.[13] At international level, the latest generation of library automation software is slowly beginning to take its place, gradually replacing the software of a previous era. Library automation vendors and other institutions vie with one another to deliver a system that can stand as a true client/server, multi-tiered, graphical, Web-enabled, Unicode enhanced, object oriented integrated library system built on an industry-standard relational database management system.[12] However, with out taking any particular package, a brief overview of the quality concerns in developing a suitable package and how to frame and evolve a suitable action plan to maintain it will be presented here.

3.1 Types and Selection

The software that is being largely used in libraries fall under three categories of commercial packages for administrative purposes like word processing, search software that comes with electronic databases, and software used for library housekeeping activities. The most

important among the software products used in a library is the one for automating its house keeping tasks and to run the in-house database operations, which is loosely designated as the library automation/ management package/software. The other two types of software is a buy and use one, whereas the library management software has to be fed with data to be used and thus database development would be of equal emphasis as a decision to acquire a package. A library management package can be acquired in two ways, either one can buy a product available in the market or devise a constructive action plan to design one in-house.

3.2. Indian Scenario

In India, Government institutions as well as private companies are developing library management packages and most of them are available in the market. SOUL from INFLIBNET Centre, TechlibPlus and BasisPlus distributed by National Informatics Centre, Granthalaya from INSDOC, SANJAY from DESIDOC (and CDS/ISIS by distributed NISSAT), and DELSIS from DELNET etc., are some of the packages provided by Government institutions and associations. Private developers are also distributing library packages, like TLMS or LibSys. Without taking a particular package, a brief overview of the quality aspects discussed above in software development and library database creation, and how to frame and evolve a suitable action plan to maintain it is presented here.

4. QUALITY IN LIBRARY MANAGEMENT SOFTWARE

The steps to be taken by the software team to instill quality in each of the software development phases are:

4.1 Feasibility Study

Both technical and financial feasibility of the project is to be examined. This is of much importance when the library is considering the prospects of devising an in-house package. The points to be considered in this connection are, the computer and network infrastructure available, and the presence of computer trained manpower in database development as well as library applications. Other aspects to be emphasized are money and time required to be devoted for the software development, targets to be achieved, deadlines to be fixed and

above all cost-benefit analysis for the whole exercise. For a service institution like library, any development effort at any cost should not hamper the essential information organisation and services. In a state of abject shortage of staff faced by many libraries, further relocation of the minimum staff thus available should be discouraged at all cost. Recruitment of extra project staff would thus be resorted to and minimum required assistance may be sought from regular supervisory or technically skilled staff.

4.2 Requirements specification

First task is to collect the requirements for the system. This involves interviewing end-users and customers in the case of a library initiative. If a commercial firm is developing the package, it can survey few libraries in the vicinity to understand the functioning of the library environment. They can inspect other packages to understand the weak points and merits of a package and how to arrest such failures in the one they are developing. Requirements specification should also cover the various changes or adaptable parameters of quality such as, expandability, maintainability, flexibility, portability and reusability.

4.3 System and software design

In the context of a library management package, an involving user interface with an active search engine is very much expected with necessary features to manipulate the largely text data comprising of often repeatable and variable length data elements. The quality factors can be classified into three broad categories as per the relevance of their features to suit the operational, external and internal features.

Operational Features: Accuracy, anomaly management, safety management, distributivity, operability, and training.

Extrinsic Features: Augmentability, autonomy, commonality, completeness, consistency, document quality, efficiency of communication and processing, self-descriptiveness, and support

Intrinsic features: Modularity, simplicity, independence, traceability, virtuality, visibility, functional scope, generality, system accessibility, and system compatibility

4.4 Implementation and Unit Testing

Detailed discussion on the importance of testing for software devel-

opment exercise is illustrated earlier. In unit testing, each of the individual programs and modules are separately tested. Emphasis is given to reliability, survivability, and verifiability of the individual programs and the modules in this phase.

4.5 Integration and System Testing

The individual modules are to be integrated and tested to observe the technical functioning, operational correctness as well as effectiveness. The quality aspects of special significance here are usability, correctness, efficiency, interoperability, and verifiability.

4.6 Operation and Maintenance

From the program developer's point of view, this involves the usual technical support to be delivered regarding customization of the package at the user's site. Safety, interoperability, reusability, manageability, etc. are carefully assessed in this phase. Since the discussion pertains to library management software, the operation face must include the in-house database design and development.

5. TQM STEPS FOR LIBRARY SOFTWARE DEVELOPMENT AND MAINTANENCE

TQM involves the implementation and application of some very fundamental concepts, as illustrated below, in the development of library software.[14]

5.1 Requirement Correctness

For any system, but especially for large systems, both project leadership as well as individual leadership must be evident in the requirements generation process. Conformance to requirements involves first of all a reasonable, complete, correct and consistent set of requirements against which conformance can be evaluated.

5.2 User Involvement

User involvement for library software development addresses the degree to which the users of the software assist in establishing the correct requirements for the software. User involvement must embody a form of translation from the operational language of the library professional/staff to a form of expression which is meaningful

to, and can be understood and implemented by, the software developers.

5.3 Evaluation and measurement

As the library requirements undergo development, people outlining the requirements will analyse and evaluate conditions or problems not previously considered. Each requirement of the system will have to be validated, and therefore must be measurable. Hence a requirement which can't be measured and validated is not really a requirement.

5.4 Self-assessment

In software development, the defined allocated requirements must be consistent with and supportive of the overall system requirements. When initiating the improvements, a measurement base must be set up so that the results of the improvements can be measured and evaluated on a regular basis.

5.5 Domain Knowledge

It is that body of knowledge, i.e. knowledge of current technology and experience in the application of these skills, contained within the members of the project team which is specifically relevant to the project to be undertaken.

5.6 Measures

In selecting measures, we can turn to many of the available sources, such as United States Department of Defense (DOD) regulations, standards and directives or the series of IEEE software standards[25] etc.

5.7 Failure Model Analysis

Once defects have been determined, they must be evaluated as to type and category. A failure model analysis must then be established to determine the root cause and net impact of each defect type and category.

5.8 Fitness for use

Software fitness for use is often equated with conformance to requirements. Software can be in perfect conformance to the requirements,

and still not be fit for use. Some larger set of use parameters needs to be considered apart from a mere conformance to requirements.

5.9 Risk Factors

The programmer must be conscious of two different software management concerns, degree of difficulty and software size. In these two, the first is one in which the user of the software can assist and next one usually rests with style of coding on the part of developers.

5.10 User Involvement During Test

It is necessary for the developer to make the user aware of and understand what it is, from a software engineering point of view, the users need, and why. The users must be made to understand if the desired goal is even possible, or how much time and money it will require.

6. QUALITY FACTORS

The software quality aspects discussed in the background of software development phases and TQM must focus both on the library functional factors and extraneous aspects or operational factors like, hardware, cost, support, speed, customisation, documentation, and other constraints.

6.1 Library Functional Factors

All developers of library management software must keep in their minds the following major features and capabilities, which are essential for a library software system. Each module of a system should have, if not more, at least, the following functionality.

6.1.1 Acquisition

- New requests – Requests from members/non-members, duplicate checking etc.
- Ordering and receiving – Approval, order generation, reminders, receipts, etc.
- Accessioning – Assigning accession numbers, generating accession register, etc.
- SDI and CAS Services – Creation of individual and group profiles; searching, saving and transmitting outputs, etc.
- Bibliographic Services – OPAC search services, how bibliographic data from other databases can be interfaced.

- Various statistics and reports – Statistics of library collection development, user transactions, services and so forth. Reports may be generated periodically to suit the functioning of the Institution.
- Budget management – It should properly administer, account, and audit all receipts and payments of money.

6.1.2 Cataloguing

- Database creation – Separate databases for separate collections, different user views, mandatory and optional fields, support for data entry and interfacing with other database formats/products, etc.
- MARC/CCF oriented – Database formats supported. How good it is to work within the evolving networked library environment.
- AACR-2/CCC rules followed – Standards followed for field ordering and presentation in the database. (another aspect is the classification code used for subject arrangement)
- Z39.50 Cataloging Client – One search engine to control different databases, other attempts at standardizing client access, etc.
- Print Catalogue cards
- Print Spine Labels
- Print Barcode labels
- Authority Control/Master databases for (Authors, Subjects, Keywords, Publishers, Vendors, Countries, Languages, Scripts, Classification Numbers etc.) – all that is dealt with standard term selection, vocabulary control, etc.
- Availability of Online classification etc. – Whether the system will provide any in-built facility to generate class numbers. Think of the system to interface with DDC database/OCLC WorldCat (see http://www.oclc.org) and help the classifier with most apt choices of class numbers for a particular book, and again flash the numbers earlier assigned in the same library for similar topics.

6.1.3 OPAC features

1. Title/Heading search; 2. Author, Publisher etc Search; 3. Keyword(s) search; 4. Boolean Search; 5. Phrase search; 6. Proximity search; 7. Free text search; 8. Full text search; 9. Dead fields – Those fields in the database, but are not searchable. Different indexes generated for permitting searching by different fields; 10. Understandable display

– Multiple display formats (standard, permissible and customized/ user selected options); 11. Print search out-puts – Saving and printing search outputs either on wide variety of media (floppy, e-mail, DAT, etc.) or on different types/makes of printers (networked, stand alone, line, dot matrix, or laser).

6.1.4 Circulation

- Holdings management – Issue, return, renewal, reservation, etc.
- Library rules – How the library rules are translated to fit into various operations; entitlement, issue period, etc.
- Overdue management – Fine calculation, collection, alerts to users about overdue books, and so on.
- Inter-library loan – Issuing collection to corporate members. How the contradiction between lending out collection to individual and corporate members is resolved.
- Member database – Add, renew, or delete member. Supplying Identity Cards and No Dues Certificates etc.
- Barcode support – Application of barcodes in fast circulation transactions, collection tracking, etc.
- Specialised Services – Generating various alerts to users when attempting critical transactions, notices about new acquisitions, new rules, information about the progress on acquisition of a book requested, and such other time critical and event critical information. Support for SDI, CAS, DDS, Stock verification, and Union Catalogue.

6.1.5 Serial Control

- Form treatment – How serials are treated in comparison to monographs? Whether the inherent features of a sophisticated document form will be properly understood and handled.
- Database creation – Current and Holdings: Facilities for loose issue management and bound volume management.
- New requests – Ability to modify or delete existing serials and options for adding new serials.
- Ordering and receiving – Support for handling administrative formalities and similar support needed to control individual issues.
- Binding control – Binder database, binding rules, page wise cumulation of serials for binding in separate volumes.

- Processing of individual issues – Cardex card printing, date of arrival, generating new arrival list of journals.
- Processing of bound volumes – Accessioning, assigning class number, cataloguing, etc.
- Article indexing – Very tedious, exhaustive and vital task. Does the system permit to forget the physical form of issues and volumes, to come down to the article level for facilitating subject access.
- Budget control – Money for serials is more than what is meant for books. More secure accounting is needed as most of the payment is made prior to the receipt of materials.

6.1.6 Data Handling

- Data interchange – Facilities for export/import of data. Formats or standards supported like MARC/CCF/ISO 2709. More concerned with inter-operability of the system with other well-established systems.
- Data upkeep – How indexes are modified to reflect new additions to the database and latest transactions?
- Back-up facility – How data is protected by periodic back-ups? Is it automatic or command driven?
- Data Security – Measures attempted to protect the data, apart from back-up.

6.1.7 Internet Features

- Z39.50 OPAC server – Support to Z39.50 will help one to augment the system to either link or utilise the web resources available. This may save considerable repetition of some of the information organisation tasks.
- Web enabled OPAC server – Access to library database through web browsers like Netscape/Explorer.
- 856 web link supported
- Embedded URLs – URLs of publishers, vendors, or authors help the user to connect to those links and amass more live information.

6.1.8 System Administration

- Technical Skills required – Does the system require a specialised computer professional or a library professional with some IT exposure. Staff structure needed to run the system.

- System security – How it is achieved? Either through single password or through multiple passwords. Encryption and firewall features. Special efforts put forth in the system to counter hacking or any other form of unauthorised access.
- Prompts can be customised
- Front end and back end: Any RDBMS or reliable database management system is embedded or a mere file handling system as back end. How aesthetically the front end is designed?

6.2 Operational factors

6.2.1 Platforms

Software should be provided in multiple platforms such as Windows NT, UNIX, Novell NetWare etc. Libraries can select the platform according to their infrastructure and needs. Thinking of DOS platform for a totally networked higher education institution or going for Unix version in a school library are both avoidable mistakes. Both Network (Client/Server) and standalone versions can also be provided.

6.2.2 Cost

Value for features, subject to the requirements of the particular library. The best package and either the costliest/cheapest will not be the most viable. Exploring the possibility of going for requisite modules, if feasible. Support and special offers for subsequent purchases or migrating to a new computer system/operating system.

6.2.3 Capacity

There should not be any restriction on its data handling capacity.

6.2.4 Languages supported

Does it support Indian languages?

6.2.5 Customisation

How much possible at individual site? Whether source code/API (Application Programming Interface) is provided?

6.2.6 Accuracy

How correctly the operations are executed by the package?

6.2.8 Speed

How fast are the operations? Test the operations on two types of machines to ensure whether the system is slow or the package.

6.2.9 Documentation

Manuals, online help messages and technical support should be part of the package.

6.2.10 Sources supported

Other than books and serials. Does it support non-paper media like microforms and evolving computer readable media such as DVD, embeded electromagnetic devices, etc.

6.2.11 Maintenance aspects

Support for retrospective conversion, data entry contract etc.

7. ACTION PLAN FOR LIBRARIES

How quality concerns need to be incorporated in selecting a suitable package and how to frame and evolve a suitable action plan to work with the package will be presented here.

- *Collection of requirements*: A detailed analysis of the library infrastructure, computer systems if available, collection and tasks to be computerised, budget available and breakup required to realize individual tasks will be made.
- *Market Survey*: Brochures will be collected from few of the companies/their agents dealing with library automation software. Information should be collected from vendors, websites (if available) or by visiting for demonstrations in conferences, fairs or friendly libraries. If short-listed, you can even ask for a demo at your site.
- *Evaluation of the software*: After surveying and attending to demonstrations, a grading system must be formulated to rank the packages based on the efficiency with which they handle the functional and operational factors.
- *Cheap/Sophisticated not the best*: It may be difficult to get a package that will suit all your requirements subject to your other limitations of system and funds. So any package good enough to meet the requirements will be the perfect buy. Side by side, if computer

systems are not available, suitable systems are to be procured to run the package.

Data base development: Initiate ground work for database development along with steps 1-4 above. Certain policy decisions are to be taken about the computerisation of library activities.

(*a*) *Standards for classification and cataloguing:* Do you want to adopt a new standard or want to continue with the existing schemes. But always follow a standard. In the case of academic libraries with a large foreign collection, it's always preferred to follow AACR and Decimal Classification. (Benefits of catalogue and class number in books and bibliographic databases)

(*b*) *Collection to be computerised:* Do you want to enter information about the entire collection or want to be choosy. For a huge collection running into lakhs, it's always better to decide about frequently issued books and those from a particular time of accessioning before initiating the massive conversion.

(*c*) *Operations to be computerised:* Most of the libraries prefer to do first the book modules and then start journals and other items. In books itself, first a database of frequently issued and new books for circulation and in circulation itself, reservation facility at a later date.

(*d*) Do you want to continue with the manual catalogue? Or stop printing of catalogue cards for new books.

(*e*) Who will do the job? The retrospective conversion work will be done by the staff (as normal duty or as overtime or with any other incentives) or contracted to outside agencies. In the second case, who among the staff will oversee the quality of the work?

(*f*) *Human resources development:* Restructuring of staff to transition from the manual environment. Training needs to be given to different levels of staff. Also may be new staff is required to be recruited with certain skills. Whom you will prefer to man (administer) the system - a computer professional, a library professional trained in computers, a library professional with computer skills or a mere library staff?

(g) *User Involvement:* What aspects of user friendliness are incorporated in the automation activities? How much user participation is permitted in the computerisation endeavour? Do you encourage them to perform some voluntary job? How much are you concerned about the interests of user community in this initiative?

8. CONCLUSION

ISO standards are awarded to various concerns as a symbol of the high quality practiced by them and even academics and librarians are experiencing this thrust. The quality aspects and its influence on improving the library organisational effectiveness, particularly the functional and operational factors, and the action plan thus arrived, have a major role in the library automation environment. There should be a standard for the library automation software in order to enhance performance of certain functions with minimum hardware/software specification and facilities.[16] The need of such standards and vital role of quality is more stressed in recent times due to the emerging networked resource sharing information environment. As librarians are getting more technosavvy, and quality prone, there is no doubt that the library packages available will go for massive overhauling in the time to come. In a country like India, duplication of efforts in library software development should be curtailed to the maximum possible extent by envisioning a co-operative task among government bodies, educational institutions and library networks, who are developing different library management software. More significant is the need to augment the quality of databases created so far or are in the pipeline at individual libraries.

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Quality Information Systems Management in Libraries

P.J. NIRMALA

ABSTRACT

In the field of Library and Information Science, quality is no longer a technical issue, but it is a business issue. In the 21st Century "new" activities and ideas are launched under a bewildering array of names like, Quality control, Quality assurance, Quality attributes, TQM, Quality Circles, Quality audit, Quality function development. This paper will discuses the concept of quality information systems.

1. INTRODUCTION

The dictionary has many definitions of "Quality". A short definition that has achieved acceptance is: quality is customer satisfaction. "Fitness for use" is an alternative short definition. The concept originated in the 1970 in Western countries. The word quality management is finding its way into services too, and libraries are no exception.

2. SCOPE OF A QUALITY INFORMATION SYSTEMS

A Quality information systems (QIS) is an organised method of collecting, storing, analyzing, and reporting information to assist decision makers at all levels in the library and information centres.

2.1 Relationship of Quality information System to Management Information System

MIS attempts to provide all the information needs of management through one integrated system.

- Information input and output are planned from an overall library view point.
- Information that would ordinarily be maintained in separate sections is consolidated to form what is called a database.
- There are several different users for the same input data.

When a library does have a MIS, the system will generate a quality information system. The impact can take various forms, as shown in Table 1.

Table 1: Impact on MIS and QIS

Impact	*Examples*
Information on quality can be stored in the MIS and changes can be entered directly.	Information on quality cost, inspiration and test data.
Recently developed hardware and methods for data collection and transmission can be applied to quality information.	Special devices for data input, video display, computer graphics.
Library generating quality information can be required to submit it in the form required by the MIS database.	Inspection and text data, reliability data, user survey data.

3. PLANNING A COMPUTER BASED QUALITY INFORMATION SYSTEM

The planning of a computer-based QIS can be complex. The road starts with an analysis of user needs, creation of a design specification for the system, and preparation of a proposal indicating costs and time required. When the proposal is approved by management, the system is developed, tested, and implemented. Finally provisions are made for review of system performance.

A system must be tailored to meet the needs of both internal and external users of an organisation. The following principles are generally applicable.

- Plan the system to receive information in almost any form imaginable. Although most of the information will be received on special forms, the system should make it possible to receive and process information by means of a telephone call, letter, or other mode like e-mail.
- Provide flexibility for meeting new data needs.
- Provide for eliminating collection of data that are no longer useful as well as reports that are no longer needed.
- Keep track of the cost of collecting processing and reporting information and compare this cost to the value of the information.

4. SELECTION OF OFF–THE–SHELF SOFTWARE

Application software packages are available for a wide variety of needs. Each year, Quality progress magazine publishes a directory of software. Table 2 and 3 respectively, show the steps in acquiring a software application package and the pitfalls involved.

Table 2: Steps in Acquiring an Application Package

(*i*)	List present and future requirements of the application in detail
(*ii*)	Survey all available packages for that application
(*iii*)	Examines package documentation and user manuals
(*iv*)	Check whether the package has sufficient application parameters
(*v*)	Check whether the package has adequate maintenance support
(*vi*)	Draw up a short list of suitable packages
(*vii*)	Negotiate and enter appropriate contract

Table 3: Pitfalls of Application Packages

(*i*)	Expensive maintenance becomes necessary, later on when the hardware, operating system terminals, network, or user requirements are changed.
(*ii*)	The package is hard to maintain owing to poor documentation, no provision for user-created code, absence of source code, excessive complexity, low-level languages, or poor-quality coding.
(*iii*)	The package do not fully adopt change in requirements.

there will necessarily be errors, and the cost of software errors may be large. To ensure quality and reliability, emphasis is essential on both detection and prevention of errors. The elements usually include.

7.1 Design Review

The purpose is to evaluate

(*a*) the requirements for the software

(*b*) the software design approach

(*c*) the detailed design

Dobbins identified ten types of software defects (Table 5) while Dudly provided a classification of software defects (Table 6)

Table 5: Type of Software Defects

Type of defects	*Definition*
Design	Function description does not meet the requirements of specification
Logic	Data is missing; wrong or extra information
Syntax	Does not adhere to the grammar of the design/code language defined
Standards	Does not meet the software standards requirements
Data	Missing, extra, or wrong data definition or usage
Interface	Incomplete format of information exchanged between two modules
Return/code/message prologue/comment	The explanation accompanying the design/code language is incorrect, inexplicit, or missing. Change in the requirements specification which is the direct and prominate reason for the required in the change or code
Performance improvement	Code will not perform in the amount of time/space/CPU allocated

Table 6: Classification of Software Defects

Type	*Definition*
Critical	Causes loss of data, interrupts operation, requires restart, requires manual intervention, destroys network connection lesswork around.
Server	Degrades performance, requires manual monitoring, forces user to use different approach, has difficult workaround.
Average	Adequate workaround, software recovers automatically, can be avoided, error message is difficult to interpret
Low	Cosmetic error, misspelling of error message, incorrectly user interface,

7.2 Documentation Review

The emphasis is on the plan and procedures that will be used to test the computer programs.

7.3 Validation of Software Texts

This consists of reviewing the results of the test to evaluate the software. Dudly classifies software testing in to two types: static and dynamic (Table 7) static testing includes design review, various forms of inspection, etc., dynamic testing runs the program on the computer, using test scenarios to final defects and weak points.

Table 7: Testing During the Development Phases

Phase	*Static testing*	*Dynamic testing*
Investigation specification	Documention inspection Document-inspection Cross-reference Check to investigation documents	
Design Specification	Design inspection Cross reference	

Contd.

Phase	*Static testing*	*Dynamic testing*
	Check documents Design analysis tools	
Code	Code inspection Style analysers Cross-reference	Functional tests Reliability tests
System and user testing		Performance tests Configuration tests Installation tests Reliability tests Regression tests
Support	As above, by activity	As above, by activity

7.4 Corrective Action System

Documentation of all software problems and follow up to assure resolution.

7.5 Configuration Management

The collection of activities to implement design changes is called configuration management. For software, the objective is to identify different versions of the computer programmes accurately, prevent unauthorised modifications, and ensure that approved modifications are extended.

8. CONCLUSION

In today's world customers/users prefer only high quality products and service. They are even ready to pay for the same. Users of information have the same attitude with regard to their information requirements also. They expect information products and services of a high quality. A better way to produce quality information is to continually improve people, processes and environment of the information centres effectively by inculcating the principles of quality management.

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Role of Information Technology in Rural Development: A Case Study of Panchayat Raj Institutions in Madhya Pradesh

S.S. CHANDEL AND S.S. CHOUKSEY

ABSTRACT

The article deals with management information systems in the rural set-up. Various tools and equipments necessary for setting of information kiosks have been discussed.

1. INTRODUCTION

Madhya Pradesh state is located in the heart of India. It is the largest state and has sixth position in population in India. Madhya Pradesh is a demographically and educationally backward state in India, therefore it belongs to BIMARU states. Presently Madhya Pradesh consists of 30,924 Gram Panchayats, 459 Janpad Panchayats and 61 Jila Panchayats.

The notion of Panchayat Raj is not new in our country. Various models of Panchayati Raj system have been developed and introduced from time to time. After independence several committees *viz.* Balvant Rai Mehta Committee (1956), Ashok Mehta Committee (1985), Dr. Laxmi Singhvi Committee (1986) were constituted to suggest means and ways to make these institutions purposeful.

Although Madhya Pradesh Panchayati Raj Act was first introduced in 1962 after the reorganisation of Madhya Pradesh in 1956 but due to a number of reasons this system could not last long and became paralysed in the year 1981. The New Panchayati Raj system in Madhya

Pradesh was introduced after the 73rd Amendment Act. Madhya Pradesh become the first state which not only enacted the Madhya Pradesh Panchayati Raj Act in 1993 but also hold elections in May-June 1994. Panchayati Raj Institutions are vital agencies in providing inputs for rural development and as such they can be termed as 'key bodies' for the development of rural society. There is a provision in new Panchayati Raj system that all the three tiers of Panchayats (Gram, Janpad and Zilla) will make and execute their plans at their level for the development of the rural society.

Dissemination of information is a prerequisites for any development scheme meant for bringing change in people's life. This is principally the area where PRIs can play vital role in bringing awareness and dissemination information among rural people. The success of rural development plans depends on active participation of the people. For this, right information at the right time is required to build up the confidence of the people. Once they develop their confidence they will be able to seek the desired information for their use from various sources.

It is a well known fact that information is a powerful tool and it is a valuable commodity required for planning, directing controlling and decision making for the development of the society. Right information to be made available to the right person at the right time at low cost is a really difficult task. But with the help of the latest information technology, it is possible to some extent. Under the new Panchayati Raj system information centres have been established on the road side of the rural areas. Recently Madhya Pradesh Government has established the information centres by which public can obtain the photocopies of the documents of the activities of PRIs and other information available in the centre. Therefore it has become the responsibility of the PRIs to make available/disseminate information/data/facts pertaining to real expenditure, estimates of income and expenditure and other available information etc. Thus, information centres do boost the rural people and increase their awareness. The latest information technology is helpful to PRIs to maintain their records and access other useful socio-economic-cultural information/data/facts for various purposes. Information Technology is a device which is used to accelerate the process of the development and expected to bring maximum social advantage for the benefit of the society. Generally computers were believed to be used in metropolitan cities only but for the

last half decade people in rural areas are also getting benefited from the use of computers and Information Technology. Span of besides being economically viable.

2. ESTABLISHMENT OF MANAGEMENT INFORMATION SYSTEM

The Information system in Madhya Pradesh under Panchayati Raj is called Gyan Doot Cyber Cafe Network. Information Technology is a broad term covering all aspects of managing and processing information. In this system Intranet and Internet, both the devices are used in the rural areas of various district of Madhya Pradesh for providing useful information for the public and to develop administrative management information system. Now the information can be obtained through local network at the village level. These Centres are established on the road side of the rural areas where telephone lines are available. The computer hardware, software, humanware and Internet are key to these systems that are designed, developed, supported or managed by IT professionals. The latest information technology has been adopted at the village level in Madhya Pradesh for the benefit of the rural society. Computerisation of PRIs has produced the concept of global village. M.P. Govt. has decided to provide better information services relating to land use, load for betterment of agricultural yields etc. to the rural people.

The Gyan Doot project has been considered in the category of public services and democracy. The six other categories include culture, environment, equal access, health and quality of life, education and new economy. Gyan Doot is an innovative approach for the sustainability of user needs. Gyan Doot is the name given to an Intranet network of computers in 21 major centres in five blocks of Dhar district. Under this network, computers have been installed at specially setup information kiosks at the village Panchayat covering about 25-30 villages. In this way about half a million villagers living in over 600 villages are covered under 311 village Panchayats that are now linked with the computer network. Even people living outside Dhar district can get information about the district through the website www.gyandoot.net. Through these information kiosks called *soochanalaya*, the rural people have easy access to the latest mandi rates and information about various welfare schemes and the

procedural formalities required for seeking benefits from theses schemes. These information kiosks also provide the maps relating to the land records and other revenue documents. People can also send their application to the district authorities through these kiosks. The nexus between the village Panchayat, Janpad panchayat and Jila panchayat, can be made easy through Panchayat Management Information System. In this system panchayat secretary will have the facility of accesing the information. Management Informations System is also working on education and health, and called Education Management Information System and Health Management Information System. Principal and health workers will be responsible for access to the information.

3. TOOLS AND EQUIPMENT FOR INFORMATION KIOSKS

Networking for Information in rural areas will require hardware, software, humanware, server, client (note), modem, printer, Uninterrupted Power Supply (UPS), Compact Discs (CD), generator, data entry operator, scanner etc.

3.1 Economics of Information Kiosks

The latest system of information communication is more economic than manual which has been in process since the last several years. The cost of the establishment of IT can be borne by three tier PRIs. According to the need it can be managed through district Panchayat Raj fund, 10th and 11th finance Commission, IEC fund of health department or other funding agencies, mandi tariff. Priority for this is given to PRIs so that responsibility, and ownership can be made for them. M.P. Government proposed that by the end of the year 2000 Information technology in rural areas will take place without additional expenditure of Madhya Pradesh government.

3.2 Information Resources

The information resources consist of the rates of agricultural yields like soyabean, wheat, gram etc. from various places like Indore, Delhi, Mumbai etc., copy of Khasara, Khatauni, B1, map of field, registration for various certificates, complaints.

3.3 Services of IT in Rural Areas

Information regarding agricultural yield's rates, copy of Khasara, Khatauni and maps of the land, on-line registration of application for caste certificate, income certificate, domicile certificate, simankan, complaint, e-mail communication etc. activities can be operated at a nominal rates.

3.4 Information Needs of the Rural People

Information is the need of the hour. All most all the social studies focus on one common fact that there is still need of awareness. According to the Vavrek information needs of common man is as under:

(*i*) Local information/news
(*ii*) How-to-do it information
(*iii*) Government Research & Development Programmes
(*iv*) Agricultural related information including credit
(*v*) Legal, Medical and Health related questions
(*vi*) Crafts, hobbies
(*vii*) Travel Information
(*viii*) Consumer Information
(*ix*) Career Employment (Vocational guidance)
(*x*) School assignments and education related information
(*xi*) Political information
(*xii*) Current Information (Radio, T.V. and train timings etc.)
(*xiii*) Miscellaneous

Therefore need of the information for common people is of great importance.

4. CONCLUSION

The state of Madhya Pradesh is predominantly a rural state having 14.55% Scheduled Caste, 23.27% Scheduled Tribe population of the total population of Madhya Pradesh. Information Technology is not a panacea for removal of constraints to rural development. But it does bring new information resources and can open new communication channels to rural people. It offers a means for bridging the gaps between developed community and rural people through initiating dialogue, interaction, new alliances, interpersonal networks and cross

sectoral links between organisations. It can create mechanisms that enable bottom-up articulation and sharing of local knowledge. Thus information system working in Madhya Pradesh will bring transparency and be fruitful for the development of the rural society as well as for better administration and planning for the natural resources etc. Therefore, there is a dire need to cover entire area of Madhya Pradesh for overall development of the rural society.

The PRIs are playing crucial role in the empowerment of the rural people and supplementing the government efforts in the delivery of different services to the people. Although PRIs are actively engaged in the Madhya Pradesh for the overall development of the rural society but the fruitful results are yet to see the light of the day. As Madhya Pradesh is a backward state and consequently the PRIs elected to the Panchayat are also not very much familiar with latest information technology. Therefore the process of training should be introduced so that IT can be utilised fully by them. The new IT will create greater participation of PRIs is several developmental schemes.

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Selection Criteria for Quality Controlled Information Gateways

TARIQ ASHRAF AND DEVRAJ SINGH

ABSTRACT

The information industry has recently turned its attention to the notion of product quality with regard to online databases and CD-ROM and same progress has been made in co-operation with the library community and online user groups. Quality is usually defined in relation to a set of guidelines or criteria. The same broad approach is currently being applied to information provided over the Intenet. The paper looks into all these aspects and lays down certain criteria for evaluation of electronic information products.

1. INTRODUCTION

Intemet subject gateways have mostly defined 'quality' with relation to carefully chosen lists of selection criteria. Quality has, however, been a subject of serious study in industry and management science since the World War II. It might be useful to describe some of the concepts developed by management theorists and practitioners and to investigate their relevance to the quality selection issue. Finally, work being done on databases and information quality will be described.

2. CONCEPT OF QUALITY IN INDUSTRY AND MANAGEMENT SCIENCE

Quality has been analysed as a factor in the management process since the 1930s, but it was not until after the World War II that it became important. North American managers brought in to advise Japanese companies on restructuring after the war and devised new concepts of

quality which began to be universally accepted. The important pioneers in this field were W. Edwards Deming, Joseph M. Juran and Kaoru Ishikawa.

A universally agreed definition of quality still does not exist. Juran[1] suggested that quality should be seen as 'fitness for use'. Another short definition views quality as 'conformance to requirements' rather than 'goodness, or luxury, or shininess, or weight'.[2] These definitions from the management literature make it clear that quality cannot just be defined in relation to some abstract concept of 'excellence', but should be seen in relation to the demands of the user of the final product. A recent working definition of 'quality' has been provided by Clark[3] 'How consistently the product or service delivered, meets or exceeds the customers' (external and internal) expectations and needs'.

In the management context, quality processes can be applied to any product. A product can be defined as the 'output of any process', consisting mainly of 'goods, software, and services'.

2.1 Product Quality

Product quality is usually defined with specific relation to the product, whether it is a goods or service. For goods, important aspects might be reliability, durability, performance characteristics, aesthetics, etc. These dimensions will differ according to the product type: the most important factor being whether it meets the end requirements of the customer.

2.2 Service Quality

Early quality models concentrated on goods. The enormous growth of the service sector in Western economies since the World War II has resulted in a growing literature on service quality. Defining and modelling the quality of services is generally acknowledged to be more difficult than modelling the quality of goods due to the intangible nature of services themselves. There are two popular models of service quality in use.

2.2.1 Gronroos's Service Quality Model

The model created by Gronroos[4] attempts to understand how the quality of a given service is perceived by customers.

It divides the customer's perception of any particular service into

two dimensions:

(*i*) Technical quality: What the consumer receives, the technical outcome of the process.

(*ii*) Functional quality: How the consumer receives the technical outcome, what Gronroos calls the "expressive performance of a service".

Gronroos suggested that, in the context of services, functional quality is generally perceived to be more important than technical quality, assuming that the service is provided at a technically satisfactory level. He also points out that the functional quality dimension can be perceived in a very subjective manner

2.2.2 The 'Gap' Model

The 'Gap' model[5] is a means of describing customer dissatisfaction in the context of service quality. A team from Texas A&M University carried out some interviews with executives in U.S. firms and with consumers. A series of five 'gaps' regarding service quality were then identified:

> "A set of key discrepancies or gaps exists regarding executive perceptions of service quality and the tasks associated with service delivery to consumers. These gaps can be major hurdles in attempting to deliver a service which consumers would perceive as being of high quality"[6]
>
> Five gaps were identified:

(*i*) Between customers' expectation and managements' perceptions of those expectations, *i.e.* not knowing what customers expect.

(*ii*) Between management's perception of customer expectations and service quality specifications, *i.e.* the wrong service-quality standards.

(*iii*) Between service quality specifications and service delivery, *i.e.* the service performance gap.

(*iv*) Between service delivery and external communications to customers about service delivery, *i.e.* when promises do not match delivery.

(*v*) Between customers' expectation and perceived service (the total of the other four gaps).

It is this last 'gap' which has the most significance. The 'Gap' model keeps a clear focus on the perceptions of the customer, and these are seen as paramount.

As part of this research, criteria for evaluating service quality were gathered. Ten key categories were identified which they called 'Service Quality Determinants', and noted that despite the different types of service analysed, consumers used fairly similar criteria. The ten Service Quality Determinants listed by Zeithaml *et al.* were as follows:

(*i*) *Tangibles:* Appearance of physical facilities, equipment, personnel, and communication materials.
(*ii*) *Reliability:* Ability to perform the promised service dependably and accurately.
(*iii*) *Responsiveness:* Willingness to help customers and provide prompt service.
(*iv*) *Competence:* Possession of the required skills and knowledge to perform the service.
(*v*) *Courtesy:* Politeness, respect, consideration, and friendliness of contact personnel.
(*vi*) *Credibility:* Trustworthiness, reliability, honesty of the service provider.
(*vii*) *Security:* Freedom from danger, risk or doubt.
(*viii*) *Access:* Approachability and ease of contact.
(*ix*) *Communication:* Keeping customers informed in language they can understand and listening to them.
(*x*) *Understanding the customer:* Making efforts to know customers and their needs.

It is possible that these criteria could provide an initial framework for the development of quality criteria in other contexts.

The work on determinants led to the development of a scale for measuring customer perceptions of service quality called SERVQUAL.[8] This scale has been subject to criticism and refinement and there is a continuing debate about the measurement of service quality and the determinants which should be used.

2.3 Total Quality Management

The development of the quality concept in industry has created a requirement for an organisational setup which can prescribe quality

concepts at every stage in the planning and delivery of a product or service. The process is called Total Quality Management (TQM). The essence of a TQM strategy is described by Bergman and Klefsjö.[9]

(*i*) Focus customers
(*ii*) Base decisions on facts
(*iii*) Focus on processes
(*iv*) Improve continuously
(*v*) Let everybody be committed

The important insight is that quality becomes a continuous process. This is especially important for service industries, where customer perceptions of quality are constantly changing. Quality becomes a process of continuous feedback and improvement.

This process is known as a 'quality system'. Bullivant[10] defines TQM as 'a commitment to a company-wide culture where everyone is clear of the direction and objectives of the organisation and work in support of each other to achieve these goals'. He however, notes that while there is general agreement about the theoretical aspect of TQM, the practical aspects of implementation are more problematic.

2.4 International Standards

National and international standards authorities have turned their attention to quality in recent years. In the UK, the British Standards Institution (BSI) first published BS 5750 in 1979 for quality systems. The latest being the Standards developed by the International Organisation for Standardisation (ISO) into the ISO 9000 series.

A useful definition of quality is found in ISO 8402: 'quality is the totality of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs.' This has since been refined to 'the totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs'.[11]

The ISO 9000 approach has been applied in many different organisations and obtaining certification can be essential in some industries. Although services can be included in the certification process, ISO 9000 is seen primarily as a product-orientated rather than process-oriented model.

2.5 Benchmarking

Benchmarking is another recent approach to ensuring improvements

in quality. Bullivant[13] defines benchmarking as "the continuous process of measuring products, services and practices against leaders, allowing the identification of best practices which will lead to sustained and superior performance". Benchmarking can be carried out with relation to different types of organisation.

(*i*) *Internal benchmarking:* comparisons with other parts of the same organisation.
(*ii*) *Campetitor benchmarking:* comparisons with a rival organisation.
(*iii*) *Functional benchmarking:* comparisons with non-competitive organisations carrying out a similar function.
(*iv*) *Generic benchmarking:* comparison of similar processes in organisations with different functions.

The purpose of the benchmarking process is not just to understand the processes carried out by other organisations, but to enable a considered self-assessment to be made of your own organisation.

3. DATABASE QUALITY

It is only comparatively recent that the library and information community have taken an interest in quality assessment and analysis . In the UK a guide to implementing. BS 5750 and ISO 9000 in libraries was published in 1993[13] and there has been a increasing interest in quality issues in both Germany and the Nordic countries. This Interest is largely concerned with issues of quality management or TQM and has led to the development of a set of IFLA guidelines for performance measurement in academic libraries and a draft international standard on library performance indicators. In addition to this emphasis, however, there has been an additional focus an defining information quality both with regard to bibliographic records and with electronic databases. It was the advent of shared computerised cataloguing that made the quality of bibliographic records an issue and studies on this have been carried out both in the UK and USA.

Information quality was not a serious concern for libraries before the advent of electronic databases, Libraries would select books and journals according to their own criteria, which would usually have some reference to users' needs or the requirements of the host organisation. This general approach was later applied to other infor-

mation formats when they became available, (microforms, video cassettes, LP records, CD-ROMs, etc.), within the financial constraints of the organisation.

Early online databases were regarded with respect by the library users. Basch[14] notes that they were regarded as "nothing short of miraculous" as research tools. For this reason, it was only by the late 1980s that database users began to make suggestions as to how they could be improved. The 1989 Annual Retreat of the Southern California Online Users Group (SCOUG) developed a "user wish list" and the following year, a rating list for database quality.[15]

The rating list was arranged in a set of ten categories:

(*i*) Consistency
(*ii*) Coverage and Scope
(*iii*) Timeliness
(*iv*) Error rate/Accuracy
(*v*) Ease of use
(*vi*) Integration
(*vii*) Output
(*viii*) Documentation
(*ix*) Customer support and Training
(*x*) Value to cost ratio

4. THE INTERNET AND INFORMATION QUALITY

SCOUG dedicated their 1995 Annual Retreat to the subject of quality on the Internet. The participants noted that the Internet was quite different to the database industry as most information providers were not motivated primarily by financial considerations. Information providers therefore had little or no incentive to improve the quality of their 'product'. SCOUG also noted that whilst certain technical standards were in place, primarily HTML, and the work being carried out by the WWW Consortium, the Internet Engineering Task Force (IETF) and commercial organisations like Netscape, but there were no content standards. They considered that people might be prepared to pay for a service which gave access to "charted, safe, quality areas" of the Internet. They identified quality issues under the following general headings:

(*i*) Credibility

(*ii*) Authority
(*iii*) Indexing
(*iv*) Registration
(*v*) Reviews/Ratings
(*vi*) Technical
(*vii*) Security and privacy
(*viii*) Feedback/Maintenance/Customer service
(*ix*) Time-size-format, pre-alert warnings
(*x*) Help files
(*xi*) Copyright, Intellectual property
(*xii*) Finding tools
(*xiii*) Downloading reliability, transparent and standardised
(xiv) Online billing
(*xv*) Reliable browsable directory of addresses for sites
(*xvi*) Censorship issues, self-censorship
(*xvii*) Search engines
(*xviii*) Advertising
(*xix*) Payment mechanisms
(*xx*) Ability to track usage of your site'
(*xxi*) Maintenance

Because of the nature of the meeting, the quality issues raised by SCOUG do not all refer specifically to information quality but to the Internet generally.

An Information Market Observatory report on the quality of electronic information products and services was published in September 1995.[16] It concentrated on quality issues raised by commercial databases, but did make mention of the Internet. The report identified the main problems as:

(*a*) Too much information—often redundant and inaccurate,
(*b*) The lack of centralised control— no editorial function or refereeing.

It also made mention of the World Wide Web (WWW).

". . . there is much duplication between sites. Sites and resources can appear, move or disappear very quickly. Websites contain information that ranges from the highly significant through to the trivial and obscene, and because there are no quality controls or any guide to

quality, it is difficult for searchers to take information retrieved from the Internet at face value".

It concluded that the Internet "will not become a serious tool for professional searchers until the quality issues are resolved".

Ciolek[17] has argued that if the WWW is to continue to be of use to scholars and the research community quality issues will have to be confronted:

"Our greatest folly seems to be our willingness to cultivate this global communication system, open to all and sundry, without first ensuring that we have enough useful and trustworthy accurate and timely information to be circulated across such a networked behemoth".

Ciolek is the editor of the Information Quality WWW Virtual Library (Ciolek, ed. 1996b) based at the Coombs Computing Unit of the Australian National University in Canberra. This WWW site gives access to information on quality issues and the Internet, and the unit administers a electronic mailing list called Information-Quality-L which acts as a centre for the world-wide exchange of ideas on Internet quality.

5. SELECT PARAMETERS FOR INFORMATION GATEWAYS

An important part of selection process is that certain items are eliminated before the quality evaluation process begins. This includes resources that do not contain any unique information (*e.g.* only provide links to other resources), resources that have been created by individuals for personal use and those resources which are out-of-date, defunct, inaccurate or superseded.

These evaluation criteria are divided into three main areas:

5.1 Information Content

To what level of detail does the resource go? how superficial/exhaustive is it?

Does the resource contain sufficient basic information, *i.e.*, in a WWW document, contact details, last update details, etc.?

Is the information presented accurately?

Is the information composed well? Is the information within a resource phrased unambiguously?

Is the resource authoritative? who is responsible for the resource? Are they reputable source?

5.2 Structural Design and Navigability

Is the information arranged logically?

Is it easy to navigate the resource?

Are hyperlinks ambiguous, *i.e.*, is it obvious where a link is leading you to?

Are there good back and forward links between pages?

Do you ever find yourself in a position where there are no hyperlinks to anywhere else?

Is the information within a resource arranged consistently?

Is the grammar and spelling accurate?

Are images used effectively or are they over-done?

Is the resource 'viewable' effectively (*i.e.*, without loss of essential information and navigability) in non-graphical browsers?

5.3 Overall Appearance and Usability

Is the aim and purpose of the resource obvious at first sight?

Is it attractive/functional?

Does it encourage you to explore further?

Is the balance of links and text good?

Is the balance of text, images and white space good?

How big is the resource?

If a WWW document is long, is it navigable? How long does it take to download? Are there single document options for those resources that may be printed?

Are there alternative options for those WWW resources which contain Netscape specific features such as tables?

6. INFORMATION GATEWAYS AND QUALITY CONTROL: SOME IMPORTANT CONSIDERATIONS

(*i*) *Accessibility:* The resource has to be accessible. There should be no dead links. Except for some important exceptions, resources should be free of charge. Commercial databases are only included if they contain rare or otherwise unreachable information.

(*ii*) *Documentation and maintenance:* There should be a minimum of information available about the resource itself—who is providing the information? When was it published, last updated, etc. Editors are supposed to check the resources from time to time, to see whether they are still 'alive'.

(*iii*) *Reliability of producer organisation:* The editors have to use their subject knowledge for this.

(*iv*) *Interest:* The resource must be of interest to the technical universities involved, from a research or educational point of view.

(*v*) *Relevance:* The information should be relevant to the subject area, user profile (*i.e.* education and research) and within the scope. The information should be substantive—a resource which consists of a collection of links to other resources will normally not be included unless there is substantial annotation or value-added information.

(*vi*) *Perceived value:* The information should be from an authoritative source. Reputation of information provider, and the information peer reviewed are important considerations

(*vii*) *Uniqueness:* The resource should not ideally be available elsewhere (different formats, sites) and

(*a*) Is there similar/better subject material available?

(*b*) Does the material have any relation to other works?

(*c*) Is it an often cited source? Constitute another important points for consideration.

(*viii*) *Maintenance:* Is the information being maintained/updated? And is the information provider likely to be able to maintain the information? (Unlikely in the case of information provided by students)

(*ix*) *Presentation of information:* Information should be presented well, easy to use and manage.

7. CONCLUSION

Quality is a diverse concept and has been applied to many things. In management science it is applied to products, services and the process of management itself in TQM. With information, we are mostly concerned with product quality—ensuring that a product, whether it be a journal, electronic database or WWW page, fulfils an agreed set of criteria. Additionally, however, information providers might have some

interest in service quality with its emphasis on the expectations and requirements of the customer or user and their fulfilment.

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Specialised National Information Centres in India and Their Networking for Excellence

O.P. GUPTA

ABSTRACT

The paper proposes the formation of National Information Centres on select subjects. It recommends that such centres be built around major university library and information facilities. Networking of such specialised centres would pave the way for effective utilisation of scarce UGC resources.

1. INTRODUCTION

Indian higher education system has a major responsibility to prepare masses with necessary knowledge and skills to meet the changing requirements of the rapidly developing global competitive world. In traditional courses the institutions, universities and colleges are producing millions of graduates and post graduates. In addition, the people doing research are no less in number but their skills and studies do not match the requirements of the present day society. Relevance can be achieved by ensuring proper policy support, introduction of updated curricula, fuller utilisation of infrastructure and continuing education programmes available.

2. PRESENT EDUCATION SCENARIO

The massive change in the socio-economic environment requires reorientation of the education system too. The matter has been discussed and debated time and again by various commissions and committees. They have stressed the need to make education job

oriented, vocational and self-employment centred. Thus, higher education in particular, should aim at producing qualified human resource to meet emerging challenges of our society. In this light and owing to inter-disciplinary developments, the functions of universities and colleges are under transformation. We have attained self-reliance in education system. The system products are welcomed throughout the world in all developed and developing countries. Indian contributions in the new technological advances like computer software developments are well recognised. USA and Japan have opened doors to welcome experts in this area.

3. PRESENT STATUS OF HIGHER EDUCATION LIBRARIES

With modernisation, the thrust of the education should be to produce human resource which is globally acceptable and at the same time it satisfies the fast changing needs and requirements of our society. One of the most disturbing features of the present day higher education is inadequate relevant education facilities. Equally well-known is the poor state of the libraries in most of the institutions. The resources pooled for creating support services are inadequate. Continuous hike in price of books and journals, Rupee devaluation in foreign market, introduction of costly IT products and other equipments for library services and decreasing use of ever-increasing volume of information by users has further widened the gap between user and information.

4. CONSTRAINTS OF EDUCATION SYSTEM LIBRARIES

The university and college libraries are supposed to cater the needs of faculty, students, supporting staff and researchers in many disciplines, need to subscribe a few hundred journals and quite a good number of latest books every year. Now the information records are coming up in different formats and from different sources. These are very costly. Especially foreign books and IT products are very expensive. As a result of continuous devaluation of currency these are going out of reach of most of the institutions. To meet with the increasing quantum of information and also to develop resource sharing system at various level, measures have always been suggested. City networks like DELNET, PUNET, CALNET etc. on are progressing. Higher education system has already welcomed programmes like National

Information Centres and networking of university and college libraries.

5. THE UGC RESOURCE SHARING PROGRAMME

The University Grants Commission was set up under the Act of Parliament in 1956 as an apex National Central Autonomous Organisation for the promotion and coordination of Indian higher education system. Since then it is working for the determination and maintenance of standards in teaching, examination and research. It serves as a vital link between the Union and state Governments and institutions for higher education. The UGC distributes plan and non-plan grants among the higher education institutions to train the youth in the specialised areas of knowledge advancement and also to match with the national and international requirements.

Thus, education is key to development. It is fundamental to all round development of human potential. It develops manpower for different levels of economy and empowers the masses to become self-reliant enough to participate in the process of national development. Education, thus is an instrument for developing an economically prosperous society and for ensuring equity and social justice. The National Education Policy (NEP) 1986 visualised education as a dynamic cumulative, life long process, providing learning opportunities to all segments of society. Keeping these facts in consideration, in the field of Higher Education the UGC has sponsored a number of programmes for library development since its inception. Considering that all needed documents cannot be pooled with each of 250 university/institutions and 10,000 colleges, collaborations it is necessary to share the resources.

6. INFORMATION LIBRARY NETWORK (INFLIBNET)

According to one estimate developed in 1989 a sum of approximately Rs. 150 crore was required to arrange books and journals in all the libraries concerned with higher education. Based on this, it was realised that the standards of teaching and research will be effected badly due to shortage of funds. To overcome the situation, a programme for Information and Library Network (INFLIBNET), a versatile, integrated Library and Information System operative at different

levels—national, regional, sectional and local was created. It was planned that as many as 100 university and R&D institutions' libraries will be designated and equipped to serve as document resource centres for purpose of Document Delivery Service. Thus, the Programme was conceived as a cooperative network and will contribute to pooling, sharing and optimisation of resources, facilities and services of libraries and information centres in the university system as well as in the R&D complexes. It requires modernisation of libraries and information centres in the country. To propagate application of computer and communication technologies and library network INFLIBNET is a programme initiated by the UGC in 1991 with its Headquarters at Ahmedabad registered as an autonomous society. It become a regular inter-university centre of the UGC in November, 1996. The main activities of the centre include computerisation of libraries, upgradation of the skills of existing library staff to work in the computerised library environment, establishment of networking facilities, creation of academic database and organisation of information services. Thus, it aims at promoting scholarly communication among academicians and researchers in India and encourage library information centres for cooperation among themselves for some select activities:

6.1 Automation of University Libraries

The INFLIBNET has arranged funds for the large number of libraries to acquire computer systems and to start automation activities. Automation of university libraries is a major activity of the programme. Every year 15 to 20 libraries are identified and initial grant to the tune of Rs. 6.5 lakh is provided. The selected universities are also provided with recurring grant for the first five years after the installation of the systems. Till now 123 universities have been covered in this process. Besides this another 62 universities, which were not covered in this programme were provided rupees one lakh assistance during 1996-97 to create core facilities for networking purpose. This has also been substantially strengthened by the UGC by arranging one time special grants. During the eighth plan period UGC special grant was provided to the nine Central universities and 17 State universities which were established before 1947. In addition to this a number of universities by their own efforts have made substantial progress in creation of database and other infrastructure in their libraries.

6.2 The Centre has developed the following databases so far:

(*a*) Book database: about 7 lakh records of participating libraries are available

(*b*) Theses: More than 1.6 lakh records of theses submitted in Indian universities.

(*c*) Serial holding database-More than 8000 serial titles are covered.

(*d*) Current serial database: it was initiated in 1998; subscription reached 10,000 titles.

(*e*) Expert database: This has 6500 records of senior faculty members.

(*f*) Research project: over 3000 records are listed.

(*g*) Secondary serials and CD ROM—Started in 1998 with 800 records. This was to avoid overlaping in subscription of databases.

6.3 Training Programmes

The Centre is organising one-month training courses, 18 courses have been conducted so far and 350 persons have been trained. Besides this, seven-day workshops are organised for executives focused on managing automation. One week-training programmes have been conducted at university premises.

The centre has a practice of organising annual event—CALIBER a national convention every year in which about 200 delegates are participating and papers read are printed in a volume form.

The Centre has developed Integrated Library Management Software (ILMS) and supplied it to as many as 62 Libraries. In its information services the Centre has been providing online access to Union Databases through I-NET and other modes. The Centre has acquired about 22 CD-ROM databases for bibliography, abstracting, indexing and reference purposes. Collaborative service with National Centre for Science Information, Bangalore named COPSDT (Content of penodicats in Sciences and Technology) is being provided. The Centre is in progress to establish a satellite based network of INFLIBNET connecting all the universities using VSATS. Thus, efforts are on to arrange excellent information to the universities and also to other users regarding universities in India.

7. SELECT INFORMATION CENTRES

In the beginning the idea was to create a network of networks to share information pooled in universities/colleges and in other similar institutions. The activities carried out at present by the INFLIBNET do not fulfil the actual requirements. In fact, the country requires a programme in which some of our libraries should be taken as nodal libraries and funded specially to develop specialised areas to work as information centre in the identified area. These should be linked with the allied libraries for resources and should also function as information dissemination centres for the rest of the world. Standard equipment, computer and software should be arranged on priority to these centres. Dedicated staff with all preparations and updated training should be posted at the modal libraries/centres and the other libraries should get their staff trained from the nodal library. Keeping in view the branches of knowledge at least fifty nodal libraries should be identified in the university system throughtout the country. These should have recurring grant to run minimum programmes. For creating such a new system existing library conditions may be reviewed and funds may be reallocated and arranged to meet their requirements.

As regards the training, use of electronic equipment and networking system should be left to the library and information schools of the country. Specialised database on local specialities should be promoted more and more to disseminate indigenous knowledge for further advancement.

This is not a new area to work. Way back in 1976, to maintain the standards of teaching and research the UGC realised the importance of management of information for its effective use. In the Vice-Chancellors' Conference in 1976 development of library facilities was a priority issue and after long deliberations, it was decided that besides strengthening libraries in the universities and colleges, some centralised facilities for libraries on regional basis should be developed. Based on this, the UGC constituted a group of experts to recommend setting up five centres at Calcutta, Bombay, Bangalore, Banaras and Delhi. The objectives of these centres were laid down as under.

(*i*) The Regional Library Centres (RICs) to give the most efficient information and services. They would be servicing centres rather than holding centres. These centres should not

duplicate libraries and paper holdings of these centres should be minimal.

(*ii*) Develop number of library facilities like reprography, microfilming, storage and retrieval of information by resorting to computerisation etc. Enable the Regional Library Centres to provide efficient information service to all concerned, at a minimal cost as well as time and to build together a well developed system of library service, documentation and information service in different regions as an information grid to service the need of the entire university system as well as research establishments, industries, etc.

During a plant period Rs. sixty thousand grant and 7 core staff to each centre was proposed. This programme was reviewed in VI[th] Plan under the Chairmanship of Dr. R. Madhuri Shah the then Chairperson of the UGC and it was recommended that state-wise Centres should be established. As a result following centres at selected universities were established.

UGC NATIONAL INFORMATION CENTRES

Subject	*Centre's Name*	*Address*
a. Science	National Information Centre for Science	Indian Institute of Science, Bangalore
b. Humanities & Social Sciences (Economics, Political Science Education, Psychology)	National Information Centre for Social Science	MS University of Baroda, Vadodara
c. Humanities & Social Sciences (Sociology, Women Studies, Home Science, Special Education, Library & Information Science)	National Information Centre for Social Sciences	SNDT Women's University, Bombay

(*a*) UGC National Information Centre for Science, Bangalore

It was established in in 1983 at Indian Institute of Sciences, Bangalore. Since then this National Information Centre for Science is serving researchers and scientists in the country. The Centre has access to a very large number of electronic information resource including databases available on CD-ROM, online and the Internet. The Centre offers different information services to meet the research information needs of the academicians. The Centre, conducts a one year Post-Master's training programme in information technology, application of Library and Information Services and also handles consultancy and sponsored R&D projects. The Centre has kept in close touch with national and international developments in the area of S&T Information, sources services and information technology, to develop its applications appropriate to the information needs of the researchers. The Centre's new programme includes the following:

(*i*) Web access to Medline and Matchsci Bibliographic databases using ERL (Electronic Reference Library) Technology.

(*ii*) Launching of three profile based e-mail alerting services, that is, citation alert, content page alert and hot papers in Science, and

(*iii*) Execution of a development project, under consultancy to port a database to the web and CD ROM.

The Centre has acquired infrastructure to accomodate increasing requirements of emerging services.

(*b*) UGC National Centre for Social Information, SNDT Women's University, Mumbai

The centre at SNDT Women's University came up with first phase UGC assistance of Rs. 22.25 lakhs. Since, then it is strengthening its collections and services. This centre has grown into an indispensable research support centre for sociology and women's studies, Home Sciences, Special Education and Library and Information Sciences. It has improved the flow of information to the academic community of India and has upgraded skilled staff to access to Internet and to make use of electronic resources. The continuous efforts have been made to develop select database. Its selected database like the SUCHAK Database contains nearly 1,08,000 references. The "PUCAT" Database is for periodicals subscribed by various libraries 'SANSTHA' is

a database, containing information about organisations in the fields, their address and activities. To maintain these a few more databases are maintained by the Centre. In order to supplement the inhouse databases, the centre has acquired several bibliographic databases on CD ROM in the areas of Food and Nutrition, Education, Population Studies, Social Sciences and Women's Studies etc. The Centre provides select dissemination of information and documents delivery services on demand.

(*c*) UGC National Information Centre for Social Science, M.S. University, Baroda

The Centre is to cover disciplines in Humanities and Social Sciences like Economics, Political Sciences, Education and Psychology. For IX Plan grant allocations the services and infrastructure requirements were reviewed and on Review Committee recommendation 11.45 lakh grant was released. The Centre has 'NASSIC' Alert service which is circulated among the Universities. The Centre provides photocopies of the document on demand. In its future plan of action the following activities are focused:

(*i*) Conduct user survey to assess the information needs of the Social Scientists.

(*ii*) Prepation of abstract for article database.

(*iii*) Creation of these database beginning from local level to national level.

(*iv*) Database creation of research in progress, research papers submitted and conference proceedings.

(*v*) To publish NASSIC Alert on half yearly basis as it is not feasible to publish on quarterly basis due to non-receipt of issues of journals till June end or so.

(*vi*) To organise workship/seminar at regional level

(*vii*) Resource generation activities

(*viii*) To sustain the Centre and become self-sufficient, services offered will be charged.

(*ix*) To organise workshops at local level for the benefit of the PG students.

(*x*) To form NASSIC development fund from the revenue earned out of service charges.

8. REVIEW COMMITTEE ON UNIVERSITY AND COLLEGE LIBRARIES

In its recent efforts, the UGC constituted Second National Review Committee for University and College Libraries in 1996. This Committee visited 17 State University and 9 Central University libraries and collected information and also through a questionnaire from other university and college libraries. In addition to this the reports appearing at various occasions reflect that all the university and college libraries are under constraints of resources. Collections, infrastructure and professional inputs and are inadequate and also under the circumstances the existing resources are not in proper use. Immediate review is suggested to improve the conditions. The aim and objectives should be redefined to face the challenges of the age. The libraries should be identified for specialised projects. The UGC allocations of grants should specifically provide percentage based amount for library input, which should be supplemented by the information marketing programmes. The staff working with these should also be regularly updated to keep pace with the advancements taking place in the field. There should be regular monitoring at national level to review the policies, if so required.

9. SUGGESTION

At least ten Information Centres in a year should be recognised and funded to achieve the ultimate goal of strengthening library facilities. This will specially help academicians of the country in disseminating research output of the higher education system. Country is badly in need of the Information Centre like

1. National Information Centre on different Level Education.
2. National Information Centre on Higher Education.
3. National Information Centre for indigenous knowledge.
4. National Information Centre for religious flourish in India.
5. National Information Centre for Indian contributions to Applied Sciences.
6. National Information Centre for contribution of Science and Technology.
7. National Information Centre for Indian History Art, Culture, Philosophy etc.

8. National Information Centre for Indian Language and Literature.
9. National Information Centre for Indian Human Resource world around.
10. National Information Centre for Indian Government affairs.

10. CONCLUSION

Recognition of university and college libraries as specialised National Information Centres and their networking will help in achieving our educational standards. It will also open the doors for marketing information and human resource in other parts of the world. Such an infrastructure will control and regulate the evergrowing financial requirements as input for creating larger infrastructure at different places. The foreign exchange expenditure will be minimised and the given resources will be utilised more effectively.

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The Future of LIS: The Qualitative Nature of the Change Brought About by the Application of IT

SHARBANI RANJAN KUNDU

ABSTRACT

The paper discusses the application of information technology in LIS arena, the current impediments in this application and the qualitative change that these changes are likely to bring. In the process, some crystal gazing has been done. The paper also discusses the future of LIS profession in the context of these developments. The focus is on how the profession is going to take in its stride the revolution in the IT and using this to the advantage of both the profession, the professionals and the users of LIS.

1. A BRIEF HISTORY OF INFORMATION TECHNOLOGY (IT)

Historically, computers came as first generation, second generation, third generation, mini and finally personal computers. Initially, computers were meant as number crunching machines. Much later, as magnetic tapes and external hard disks allowed large scale data storage, information storage and retrieval were thought of. This was when third generation computers were finding place in big institutes, universities, private and public enterprises, defence establishments, etc. Higher level programming languages were being developed in private laboratories and universities and even defence establishments. These languages enabled information storage and retrieval of non numeric data in addition to number crunching capabilities.

Preparation of indices – an important tool in information storage and retrieval started during the days of second generation computers.

This then can be thought of as the beginning of application of computers for library and information services. Index preparation can be considered as *first generation LIS activity*. This activity continued as third generation computers came and higher level programming languages were developed. With the availability of storage media like magnetic tapes and removable hard disks, directory preparation activity started. From index preparation to directory preparation can be considered as *second generation LIS activity*. Meanwhile, data base management softwares (DBMS) were developed. These were for third generation mainframe computers. As miniaturisation of memory and circuitry started, minicomputers came into being. Softwares for typical library activity arrived on the scene. A noteworthy name in such softwares is MINISIS. This period was soon overrun by the availability of personal computers. DBMS for personal computers arrived with a bang.

PCs caught up in time and the culture galloped to a dizzy speed. Most noteworthy DBMS software of this period was dBASE of a company called Ashton Tate. It was used everywhere, in business houses as well as in libraries. Meanwhile, UNESCO released a typical software for LIS activities, *viz.*, Mini-micro CDS/ISIS. This can be considered as the *third generation LIS activity*.

LIS activity was into *fourth generation* with the availability of total library automation packages. Whether it is Sanjay, based on mini-micro CDS/ISIS software or commercial softwares like LIBSYS or GRANTHALAYA.

However, before fourth generation activity ran its full course, LIS activity is into *fifth generation* today with the availability of Internet connection and, the concept of electronic document delivery, etc.

The shape of LIS activities as IT is applied are discussed below. Subsequently, some crystal gazing of the future of LIS activities has been done. (Grosch, A. N. 1995)[1]

2. APPLICATION OF IT IN LIBRARY

Accessioning, classifying, cataloguing are some of the back office activities in the library. Some of these activities have undergone changes because of application of IT. This is generally referred to as library automation. Application of IT in various library activities are briefly described below.

2.1 Acquisition and Accessioning

Variously, a vendor list may be in database form. Books awaiting selection can also be in a computer database. A list of books under selection can be generated and circulated among selection committee members by electronic mail. If the library has a website, these can be hosted on the website. User's opinion can also be taken through an interactive website. Selection committee members can electronically convey their advice. Users can directly send in their suggestions for acquiring particular books or subscribing to certain journals. Purchase order can then be computer generated. Bills can be obtained electronically. Soon payments can also be electronically done making use of electronic commerce facility. Selected books can then be accessioned.[2]

The accessioned books can then be notified in an electronic bulletin board or can be displayed on the website of the library in multi media mode, showing images of the jackets (front, back and inner lapels). A brief description of the book can be in text form or even audio.

2.2 Classification

In classification activity also, electronic media can be of great help. Classification schedules are now available on CD-ROM. Some software can be generated which help in on screen classification. Such a software can even be saddled with artificial intelligence. Bar code strips can also be generated containing accession number and book number. These can then be affixed on the books. This last work, *viz.*, bar code generation is already being done in several places, including INSDOC.

2.3 Cataloguing

The information of the accessioned book can then be made part of the catalogue data. The catalogue can be queried on screen.

Authority control tools can be used for cataloguing. In its new form a library can use the Internet to transmit newly catalogued bibliographic records to some agency specialising in authority control that can processes the records through its system. The library can then log on to the agency's file transfer protocol (FTP) server to retrieve fully authorised catalogued records. One such agency in USA is

Library Technologies, Inc. (LTI), whose authority control system is Authority Express. Internet address of LTI is www.LibraryTech.com.

"The Online Computer Library Centre (OCLC) is attempting through its Cooperative Online Resource Catalog (CORC) project to provide an automated means of cataloguing . . . Internet resources . . . CORC's . . . software captures the resource description . . . and . . . saved as a Dublin Core (DC) document or machine readable cataloging (MARC) record . . . . . With CORC users can assemble . . . Web compilations . . . and can be incorporated with bibliographies."[3]

"Many catalogues of OCLC, RLIN, LC, etc. can be accessed which greatly simplifies the cataloguing process . . .".[4] Then, there is Source Data UKMARC containing flexible raw data feed for library management systems by Whiteker.

On line public access catalogues (OPAC) are becoming quite popular. Such catalogues can be made available on the Internet.

2.4 Circulation

Circulation is a front office job which has undergone change because of library automation.

Request for a book can be checked for availability on the shelf. When the book is available, the same can be issued to the reader, if not available, then it may be reserved. Upon availablity computer generated notice can be sent to the requestee by e-mail. The request for a book can also be sent by e-mail. The book can be issued electronically by making use of the bar code strip pasted externally on the book and handed over in person or despatched to the user by courier.

2.5 Serials Management

List of serials can be maintained as a database. Subscription renewal alert for journals of different frequency can be brought out weekly, fortnightly, monthly, bimonthly, quarterly and half yearly. Very soon such subscriptions can be sent electronically, at least for major journals.

2.6 Reference Service

Reference Service can also be operated electronically. A request for a reference service can be given by e-mail. Catalogue, databases, CD-ROM journals, abstracting journals can all be queried for providing reference service. Reports can be prepared by using various automation packages and sent electronically to the user.

". . . digital reference services have made a solid beginning in academic libraries." However, ". . . it appears that using the Internet as a medium for the reference process is still in its infancy."[5]

2.7 Examples

A few library automation packages are described in brief in order to get a feel of the products available worldwide.

Alice Library Management System is a software for managing any library or resource centre (www.softlink.co.uk).

"BUILDER (Birmingham University Integrated Library Development & Electronic Resource) is part of the eLib project supported by JISC (Joint Information Systems Committee) for seamless access to . . . printed and electronic material, via a web-based interface".

CAIRS library management is an integrated software package suitable for small as well as large libraries and provides Internet based information service.

Another library management system in UK is PenLib for small to medium libraries. (www.baileysolutions.co.uk).

SIRS Mandarin M3 is a state of the art Windows library automation system providing a multilingual OPAC, flexible circulation and cataloguing, powerful 32-bit client/server architecture, Z39.50 technology and a complete MARC record engine. (www.infotoday.com).

UK libraries plus is a reciprocal access and borrowing scheme for part time, distance and placement students to borrow from ... libraries close to where they live or work, . . . also offers staff and full time students access to each other's libraries . . ."[6]

Unicorn library automation system is suitable for different type of libraries including multi-site ones having WebCat, the first WWW OPAC and Hyperion, digital media archive.

3. AUTOMATION OF SERVICES

Apart from being a repository of books and journals, a modern day library provides various services. A few or all of services like photocopy service, document supply, current awareness, selective dissemination of information, abstracting, bibliography, bibliometric, are part of the stable of a modern library and documentation centre. All these services are being and will be tremendously affected by the application of IT.

3.1 Photocopy Service

Very sophisticated photocopying machines are now available. These machines are photocopy plus small scale printing machines. Huge amount of photocopying/small scale printing enables fast document preparation. This capability enables libraries to work as document generator and supplier, in addition to its traditional information repository role.

3.2 Document Supply

Document supply can be variously automated using IT. Request for a document can be sent by e-mail. A document can be located through a union catalogue on CD-ROM or even an on-line database. The document can then be obtained as an image from the point of availability by file transfer and sent to the user as a file, which the user can download. This electronic document delivery will speed up the process of document delivery tremendously. User friendly document delivery software is required to be developed and made widely available to give fillip to automated LIS activities, For example, VDX is for inter library lending and electronic document delivery (http://www.fdgroup.com/fdi).

Very soon, OPACs will together constitute a *virtual union catalogue galarie*. If some standardisation is done in the preparation of computer catalogues and if appropriate softwares are prepared, the virtual union catalogue galarie can be made into a *virtual union catalogue*.

3.3 Current Awareness

General, anticipatory current awareness service can be given by keeping in mind the focus of the library. IT helps to increase the reach , the depth and the quality of this service with the help of Internet connection, the world wide web, electronic bulletin board facility and *direct to user* syndrome through network connection.

Responsive current awareness service will also get similarly modified because of IT.

As of today, Topics Select of Institute of Scientific Information (ISI) helps retrieval of topic specific information. Focus On of ISI covers broader areas.[4]

3.4 Selective Dissemination of Information

The selective dissemination of information (SDI) activity was enabled because of computer databases and information retrieval software. Today, into the fifth generation of LIS, SDI activity can be spruced up. A user can register into an SDI service electronically. Based on a user's profile, online data bases can be queried, searches can be conducted through the Internet, electronic journals can be looked up, then a report can be prepared and the delivery can be done to the user electronically.

As of today, to give an example, Personal Alert/Professional Alert of ISI provide customised profile based individual/group service.[4]

3.5 Abstracting and Indexing Service

Abstracting and indexing services can take the help of IT to a great extent. "The Institute of Scientific Information as well as major abstracting and indexing services started including some titles available on Internet for indexing and coverage in their databases."[4]

Author abstracts can be transcripted in a database, edited on screen to bring homogeneity, can be arranged subjectwise, using broad classification or in depth classification, depending upon target user requirement; then a hard copy may be produced using desk top publishing or it may be made web enabled or it can be cut into a CD.

The hard copy or CD need distribution. The web enabled abstracting service can be charged in due course of time, electronically.

3.6 Bibliographic Service

The bibliographic service can now be given making use of multiple sources: books, journals, abstracting journals, on-line databases, the Internet, electronic journals, etc. The collected information can all be put together using some office automation package and supplied to the user.

Commercial bibliographic service products are also available in the market. For example, BookFind-Online is a Web-based bibliographic service product. (www.bookdata.co.uk). Similarly, LibWeb is an online bibliographic service for libraries by Whiteker.

3.7 Bibliometric Service

Bibliometric service is now much better handled making use of the IT tools like CD-ROM and on-line databases. Some statistical packages

can also be used for better analysis. Office automation packages allow much better packaging of bibliometric service.

4. IMPEDIMENTS

The impediments in the application of information technology are many. "It is not easy to change operational procedures, organisational structures, and established work habits and outlooks; such social changes generally lag behind technological change".[3] Some of the impediments are discussed and solutions have been suggested.

4.1 Physical Resource

Physical resource is never sufficient. However, when management wills, money flows. For information technology, today, physical resource should not be a problem. It should be considered like book racks, furnitures, cabinets, etc. In physical resource, what is not given due importance is the software. There is a tendency to get softwares free. This attitude should give way to use of only licensed software.

4.2 Human Resource

Human resource, however, can not be equated to physical resource. The paradigm shift brought in by application of information technology is too much for the older professionals. Excepting arranging for retraining, there is no easy solution. Such staff have no other option but to take the help of their younger colleagues in performing tasks in the new mode, like using office automation packages, library automation packages, etc. Jobs performed in this mode should be considered as jointly performed, so that there is no resentment in the younger colleagues. Therefore, a harmonious symbiotic work environment will exist. Care should be taken that younger colleagues should not fall into the work mode of their seniors and should endeavour to remain in the new working mode.

4.3 Inertia

Inertia should be got over by the library and its personnel. It should be emphasised that library of yore has only limited role. Excepting for club libraries which supply books for bed time reading, information technology should be invited with open areas. The kind of training that is given in schools and institutes of higher learning today, the

library has to act as the source and provider of information and IT helps to organise information services much better. Today, IT gives the profession a gloss and prestige as never before. The job is much more absorbing.

4.4 Culture

Societies where working with own hands is considered non elitist, IT is considered a tool like a typewriter of a typist, shorthand pad of a personal assistant or the drawing board of a draftsman. Sitting down at a machine and working on one's own is anti status. If it is not status, what else drives a person form position to position? This status driven work place environment should go. Effort must be made by giving O&M (Organisation & Management) training, training in work place psychology, etc. so that a PC is wielded like a pen or a paper file by all library professionals and start hammering at the keyboard wildly whenever any job is to be performed, instead of waiting for the assistant to come and help, whether it is accessioning, cataloguing, customer servicing and whatever.

4.5 Motivation

Motivation today is aplenty as far as application of IT is concerned in LIS.

Performance is several folds without much physical movement and therefore distraction. Once IT tools and systems work fine and electronic workplace standards are maintained, the job is hassle free and human-vagary independent. This results in job satisfaction. This is a big motivation and also can be considered the first motivation.

A society which swears by technology, the profession becomes very respectable when IT is used for its activities so much. This rise in status of the profession because of the use of IT also gives monetary benefits in terms of salary, remuneration, etc. This is the second motivation.

4.6 Management

Things usually change with time, sometimes in undefinable ways. But institutions and organisations are managed. So the changes can be brought about managerially by guiding, motivating, reengineering. What is required is a will. Sometimes of course necessity drives things. But here also managerial role is important.

New managerial paradigms are required. Certain cliches like accountability, hire and fire policy need not be superior management techniques in intellectual applications like LIS discipline. Rather *knowledge orientation* in work (*Jnan Yoga),* societal orientation in thought and work, participatory management etc. will bring quality. Application of IT only facilitates this. New management techniques are required to be thought of and applied consciously, conscientiously, objectively and truthfully. The human aspect should never be ignored.

5. THE FIFTH GENERATION IN LIS ACTIVITY

The fifth generation of LIS activity is highly crowded. There are databases of various kinds. Web publishing wizards of RDBMS softwares enable databases to be published on the Internet.[7] There are on-line international databases. There are CD-ROM journals. There is the Internet and the World Wide Web. OCLC's FirstSearch provides an integrated service with more than 80 databases and nearly 2500 electronic journals.[8] "Internet immensely helps all the important activities and services offered by a library including acquisitions, cataloguing, reference services, serials, interlibrary loans, specialised resources, etc."[4]

"The Web, . . . the CD-ROM, and the . . . Windows-based platforms have changed the availability and accessibility . . . Windows-based systems and Internet's use of this technology have allowed end users to directly access information . . . Libraries have enthusiastically embraced these technologies by providing public service terminals and by making their catalogs and other resources available on the Internet. As a result, reference interactions have expanded . . . to include such options as electronic mail . . . and Web-based instruction, . . . the need for librarian mediated search has reduced drastically."[9]

However, Internet has resulted in information overload. Librarians will have to take over the responsibility of sifting through multiplicity of information to provide quality information. Further, there are softwares of various kinds, from enterprise resource planning (ERP) to statistical softwares. These, apart from the traditional activities, are in various stages of modernisation because of application of IT.

How many skills an LIS professional has to acquire? How to acquire these? These issues will rock the first decade of the new millennium.

5.1 Skills & Training

It will be best to start with the various concepts of a traditional library, give a theoretic overview and not go into say things like in depth classification because people have already started rethinking about its role in the present day scenario when IT tools are at hand.[10]

Next, information services can be introduced to.

Next, it will be best to give a good grooming in office automation concepts and tools.

Next, various total library automation packages may be introduced to, national and international.

After this, train the professionals on the Internet and the WWW. It is likely, sometime later, new entrants to the profession are already trained in the Internet and the WWW. They then may be told how the Internet and WWW is used by the LIS professionals currently, what resources are available and what new possibilities are awaiting application.

Next, teach them Systems Analysis.

After this, introduce them to the concepts of databases and applications.

Finally, teach them a little bit about management tools and softwares.

6. CRYSTAL GAZING

A little crystal gazing is quite in place in a highly dynamic situation of today. Where is the profession of LIS heading in this fast changing scenario? " . . . the profession of librarianship . . . seem to be in disarray, fraught with uncertainty and anxiety over its future in the computer age."[3]

If books are published electronically, if information can be had from websites, if information can be downloaded by file transfer, will any user need an LIS professional? The answer to this has to be given carefully.

Published information since long has mostly been in paper documents. A library acquired these paper documents, classified them and kept them in store so as to be available readily on demand. Today ". . . librarians . . . have two equally formidable formats to consider: print and digital."[3]

If published information has to be mostly in electronic form, there will be two kinds of documents: *physical electronic* like CD-ROM and *remote electronic* like centralised databases or distributed databases on servers. In the case of the first, a CD-ROM library can be built. In the case of the second, a *virtual collection* has to be built of all those remote electronic documents.

Much like a paper book can be purchased or borrowed from a library, an *electronic book*, or an *electronic document* can be *purchased* or borrowed from a library! Surely, when books are published electronically, they will be 'sold' electronically too. A library can surely make a collection of these electronic books! For "the functions of a library are to acquire works, store them, make the works available to the reader, and reimburse the author and the publisher for their efforts".[11]

The acquisitions can be virtual, meaning licence can be obtained to use them from the publisher. An exciting new possibility emerges. Instead of buying the book outright, it can be bought any number of times, making each 'purchase' exceedingly cheap. Further, it saves space (electronically) and it saves money and a hardly used book is not stored unnecessarily.

So, it does not seem likely that libraries will vanish from the scene. The libraries will have varied ware fare! That will include paper books and journals, CD-ROM journals, electronic book collections, etc. New softwares will arrive on the scene to make use of this varied fare. For example, Bigchalk Retriever is an integrated library search engine for library's diverse electronic data: library catalogue, online databases and web resources. "The American Library Association has announced that its new Libraries & the Internet Toolkit is available . . . at http://www.ala.org/internet toolkit . . . designed to assist librarians in managing the Internet. Sun Microsystems, Inc. and Stanford University . . . are joining forces to develop a permanent electronic publishing solution . . . funded by National Science Foundation. . . . The primary goal . . . is to enable libraries to manage Web content".[2]

7. CONCLUSION

Once there is a library of the emergent kind as is evident by descriptions contained above, LIS in the new scenario will require reorienta-

tion and reengineering. "At this point, the digital information system is too immature . . . to become a trusted and reliable medium . . . . . Rather than . . . duplicative print collections . . . digital technologies . . . provide . . . centrally organised information storage . . . and quick . . . cost effective access."[3]

New methods and techniques will emerge because of the application of IT. ". . . hyperlinks . . . move quickly . . . from . . . index . . . to abstracts to full multimedia documents with the click of a mouse." .(Brain, J., Groen, F.; Thorin, S. 2000). These paths and techniques will chart new courses for the profession and the professionals. ". . . librarians will be subject specialists ferreting out . . . accurate and useful information on the Web."[3]

The changes will bring in qualitative change in the profession enabling the spirit of the profession to reach a superior plane.

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Reorienting of LIS Education According to Contemporary Needs

M. MASOOM RAZA

ABSTRACT

The articles analyses the post trends and developments in LIS education. It emphasises on the accreditation factor and proposes various modifications in LIS education in the light of latest technological developments.

1. INTRODUCTION

The history of LIS education in India is as old as history of S.R. Ranganathan. It was because of his efforts that the first one year Post-graduate Diploma Course in library science was established at Madras University in 1937. This course became a typical model for the development of library science training programme in the country both before and after Independence. Gradually this diploma course gained prominence and five university departments started library school in pre-independence phase and thereafter the figure multiplied along with restructuring the library school course at Graduation and postgraduation level, with the result that LIS today is a well-recognised discipline of postgraduate study and research in about 80 universities, including the country's three open universities. Some other training centres (DRTC) and documentation centres (INSDOC) impart library courses (Associateship course) which are treated at par with university courses.

2. EXISTING LIS CURRICULUM

The curriculum recommended by the review committee of the

University Grants Commission (UGC) with S.R. Ranganathan as its chairman had been adopted by most library schools in the country.

The Review Committee recommended the following courses for this programme (*i*) Library organisation; (*ii*) Library administration; (*iii*) Physical bibliography and book selection; (*iv*) Library classification (theory); (*v*) Library classification (practice); (*vi*) Library cataloguing (theory); (*vii*) Library cataloguing (practice); (*viii*) Record of practical work.

The scheme with minor restructuring by some library school was accepted *e.g.* the course of library and society, reference and information service and topics like documentation, history of libraries, computer application and audio-visual materials, types of libraries were supplemented in the prescribed list under broad heads or under separate heads. The committee recommended the study of depth classification, documentation library cataloguing, universe of knowledge, types of library systems and literature survey in areas such as Indology, social sciences etc. at Master degree level. In addition, the candidate was to undertake a project including a documentation list and project report on an approved topic.

The M.Phil/Ph.D. degree programmes deal with research in various problematic aspect of LIS education and deducing optimal solutions through methodical and scientific study. The course work and dissertation constituted the part of this degree programme.

3. CHANGING SCENARIO

Rapid advances in IT and the growing importance of information in daily life have created great demand for professionals who can handle information. The curriculum recommended by the Review Committee was apt according to the period of time but because of information explosion, the LIS education transcending its barrier and becoming inter-disciplinary and multi-disciplinary demands expertise to handle the amassing data through proper storage, retrieval and dissemination of right information to right user at right time. Earlier, the manpower generated by LIS schools were expected to perform routine works of library but now the expectation are quite different with changing needs of society. The change being a healthy sign of development should be treated mandatory and adopted as early as possible, otherwise the manpower generated will be a sheer wastage of time and money; thus

leading to unemployment or underemployment and frustration which is a threat to the sustainability of our profession. The changing milieu demands reorientation of LIS curriculum to enable the librarians to work confidently and efficiently in these fields. According to Michael D. Cooper "a reorientation of existing library education and training will have to take place". The new areas like system analysis, statistical methods, computer application, library network, information storage and retrieval techniques, research methods, information science, information systems and programmes need to be included in the curriculum and basic technical training should be made mandatory at LIS schools. This is the only alternative to cope up with changing milieu for our professional sustainability.

4. MOOTABLE ISSUES

(*i*) Role of UGC in restructuring LIS curriculum *i.e.*, formulating and implementing new standards.

(*ii*) Specifying other standards like strength of faculty, admission requirement, infrastructure requirement, financial requirement etc.

(*iii*) Accreditation of LIS education according to new standards.

5. CONCLUSION

A considerable time has elapsed since the inception of LIS education but still many universities imparting these courses are not properly equipped with infrastructure, faculty and various other indispensable facilities and thus producing inept manpower. So the UGC should take the initiative in reorienting the curriculum according to contemporary needs hence producing a new breed of professionals who are able to successfully perform their role in the fast changing society using new information technologies.

The proper standards should be laid down by UGC and the accreditation authorities should check the compliance/negligence of the standards laid down so that the quality of LIS education should not suffer at any cost.

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Development of LIS Curriculum: A Necessity for Survival in Information Technology Environment

AMRITPAL KAUR

ABSTRACT

The article discusses the impact of technological advancements on libraries and information sector and their implications for LIS education. It describes the present situation of LIS education in India and recommends two-year integrated course leading to 'M.Sc. in Library and Information Studies'. Suggests that the subjects relating to Information Science, Information Management and IT which have till now been grafted gradually onto the LIS curricula over the years must now be completely integrated within the curriculum with special emphasis on computer lab work and field work in the libraries. Concludes that this course will enable the graduates to develop necessary skills/competencies for performing the divergent roles and make good of the opportunities offered to them in the new information technology environment.

1. INTRODUCTION

The development of LIS curriculum to suit the information environment has become a burning topic these days. The unabated advances in the field of information and communication technologies supplemented by the rapid growth of information industry have led the world into information age in which "the quality of life as well as prospectus for social change and economic development depend increasingly upon information and its exploitation . . . the education system and the market place are all influenced markedly by advances in information and knowledge."[1] To tune with the societal and environmental changes and to adapt themselves to these changes to be conducive to provide effective information services to the users, the libraries are

fast emerging to embrace new information communication technologies (ICTs) which have the potential to increase their ability to handle the vast amount of information, to access a wider range of information and satisfy the growing information demands of the increasing number of users. The use of ICTs in the libraries necessitates a completely different approach to the education and training of information professionals.

2. INFORMATION SCENE IN INDIA

Since the mid-eighties India has made rapid strides in the field of telecommunication, satellites, computers and laser technologies. The developments have been so fast that these have profoundly influenced the total information environment in the country. Libraries being the backbone of the national information environment owe a special responsibility to provide information support to the research and development programmes of the nation by increasing their utility and efficiency using ICTs. Computers are now being extensively used in many of the libraries for automating a number of library operations. Automation activities in special and academic libraries have been picking up with support from INFLIBNET, UGC and NISSAT. They are beginning to use e-mail, CD-ROMs, LAN, machine readable catalogues etc. for resource sharing. The emergence of various networks at the local and national levels such as CALIBNET, DELNET, MALIBNET, BONET, INFLIBNET and increasing access to Internet point out that in the coming years, India's transition to information based society will be faster. Technology Information Forcasting and Assessment Council (TIFAC) estimates that there will be 10 million Internet users by 2005.[2] The IT industry worth $ 6.90 billion in 1997-98 will grow to around $ 120 billion in 2008.[3] The report of the National Task Force on Information Technology and Software Development (1998) recommended 'IT for all'. It visualised that the rate of PC/Set-top-box penetration in the country will be accelerated from the 1998 level of one per 500 to one per 50 people along with a universal access to Internet/Extranets/Intranets by the year 2008, with a flood of IT applications encompassing every walk of economic and social life of the country.[4]

Such an atmosphere will offer bountiful opportunities to the library information professionals not only in the library settings but also on all the fronts of information sector.

3. IMPLICATIONS FOR LIS EDUCATION

The information environment and use of IT in the library profession has great implications for LIS education. The pervasiveness of the emerging networking and communication technologies, multimedia and the Internet etc. demand drastic change in teaching/learning systems more than ever. Hence well-planned and well-organised courses must be developed to enable the students to develop necessary skills/competencies for performing the divergent roles and make good of the opportunities offered to them in the new information environment. In today's "technology-implementing era", a quality educational system requires a change in the way teaching is conducted and two basic factors that need to be considered in the new system of teaching/learning are: comprehension and communication. The new strategy for technology—changing the teaching/learning style – is to look at all knowledge and skills, all machines and equipment, all manuals and software etc., as comprehension and communication processes, and not as products."[5] It is evident that the technologies and their application must be made an integral part of the library curriculum so that it prepares the LIS graduates to work as information professionals as well.

4. LIS EDUCATION IN INDIA

There are very few comprehensive LIS education programmes that have incorporated ICTs modules *e.g.* INSDOC, DRTC and a few universities like Madras, Mysore, Northhill and Birla Institute of Technology where two-year integrated MLISc course has been introduced. Most of the LIS schools still persist with teaching traditional subjects like classification, cataloguing, book selection, acquisition etc. The emerging areas such as telecommunication, management of information systems, databases, networks and networking, online access, Internet etc. are not given their due share in the present curricula. A study of the LIS programmes 2000–2001[6] being offered at some universities like Delhi, Panjab, Punjabi and Guru Nanak Dev reveals that half of the BLISc syllabus is devoted to the teaching of cataloguing and classification. Only elementary study of the computer/information technology has been added. Delhi University syllabus does not even make a mention of this. Even at MLISc level, the universities of Delhi, Punjab and Punjabi have introduced the paper "Computer Ap-

plications in Libraries/Information Centres' as optional paper. In Guru Nanak Dev University, this paper has been introduced in the fourth semester. This period is too short to provide intensive training in the applications of computer. Much emphasis is given on theory and the practical part confines only to creating databases of records of bibliographical items.

All this shows that the report of the UGC Curricula Development Committee (CDC)[7] which outlined the detailed curricula for Bachelor's, Master's (1 year and 2 years) and M.Phil programmes in LIS keeping in view the requirements of the information society, has made little impact on the existing curricula of LIS schools as no follow up action has been taken to implement the report.

It is clear that LIS programmes in India have not become receptive to the new emerging situation. They fail to develop the required knowledge and skills relating to the use of IT among students. As a result, the graduates from the LIS departments have little competitive potential in the information employment market. If this trend is allowed to persist any longer, the day is not far when the information arena will be usurped by the computer personnel and the library personnel will soon be "outnumbered, out manoeuvered and rendered marginal".[8]

The professional literature abounds with warnings and strategies for the survival of information professionals. Van Brakel uses the Darwinian phrase 'survival struggle' to describe the scenario in which information professionals battle with other professions "to obtain a visible and viable share of the information industry or rather information market place'.[9] The 'panda syndrome' describes the fate that could befall information profession if it fails to update the education programmes and suggests a strategy for survival which includes retaining the genetic material of librarianship as a knowledge base, whilst adding new areas of knowledge.[10]

5. DEVELOPMENT OF LIS CURRICULUM

LIS schools must act fast to design and implement curriculum which should prepare graduates to cope up effectively with each emerging situation. While designing the curriculum, the framers must keep in mind the needs of the growing information industry as most of the graduates are likely to get jobs in computer software centres, science

and technology consulting organisations, information centres, government departments, companies, banks, publishing houses and other research and educational institutions. Such a situation calls for a combinatin of a wider set of skills with traditional subject knowledge and professional competence with a broader base of general managerial abilities and organisation competency, IT skills and stronger communication and interpersonnel skills.[11]

All this requires that the boundaries of LIS be expanded by impinging on such fields as computing, telecommunication, management, cognitive science, communication etc. The knowledge and methods from these fields should be assimilated in LIS in such a way that the identity of LIS is maintained as an independent subject. The other fields in addition to the usual subjects that need to be taught are:

5.1 Information Technology

Current trends and developments in technologies; use of computers for information processing including systems analysis and programming; database design and file structuring, electronic document delivery; intelligent knowledge based system; optical data storage and retrieval; networks and networking; online searches and Internet.

5.2 Information Management

Information and communication; information representation, retrieval and transfer; technologies for information processing and distribution; information analysis, consolidation and repackaging; information industry; economics of information products and services; information policy; information systems; information use and users, information marketing.

To avoid overloading the LIS programmes, the areas relating to philosophical and historical aspects of librarianship and traditional techniques which are no longer relevant to the new information technology environment may be shed off.

The LIS curriculum should be developed as a coherent whole. The present practice of bifurcating the course into BLISc and MLISc each of one year duration provides hardly any opportunity for providing intensive theoretical and practical training in the use and application of information technologies. A two-year integrated course leading to M.Sc. 'in Library and Information Studies' (LIS) should be introduced in all the LIS schools of India just as fourteen universities

[see Appendix] have already done. Out of these only three universities *viz.* University of Madras, University of Kuvempu and Birla Institute of Technology (BIT) have named it 'Master of Science (M.Sc.) in Library and Information Science'. To avoid repetition of the word 'science' in the nomenclature, it is suggested that the course be named 'M.Sc. in Library and Information Studies'.

It is suggested that the nomenclature 'Library and Information Science' be changed to 'Information Studies'.[12,13] But if we remove the word, 'Library' from the title, there is the danger of its being merged into Information Science for the difference between 'Information Science' and 'Information Studies' will become almost imperceptible.

The new nomenclature will bring the LIS departments at par with science departments for allocation of grants, equipments and resources as LIS and its curriculum are going to be in direct competition with computer science, educational technology, management, information systems and services.

Practical training in IT requires that greater emphasis should be given on computer lab work, workshops, seminars and tutorials. Field work in the libraries/Internship/Practicum at least of two months duration should be made compulsory just as BIT, Bishop Heber College and Madras University have already done. It will provide students an exposure to real life situation and problems. It should be conducted in relation to a student's suitability for a work setting or speciality. It should be organised in good libraries having sufficient IT facilities. For this credit should be given in the total assessment of the candidates.

The teaching of the course would require:

(*i*) that LIS schools/departments be provided with IT laboratories fully equipped with the latest hardware and software including Internet connectivity on the lines of BIT. It offers (*a*) software lab, (*b*) online information access, LAN, CDS/ISIS, Foxpro, ORACLE etc. lab and (*c*) UNIX and C lab as three separate practical courses.

(*ii*) that LIS departments be provided with teachers with IT specialisation.

It would also be worthwhile for LIS schools/departments to offer a few competency-based and object-oriented one year special LIS courses after M.Sc. (LIS) to provide students with the necessary skills

to find employment in a particular environment. These courses can be in areas such as:

- Internet and world wide web
- Telecommunications, networks and networking
- CD-ROM and online searches
- Database management system
- Information systems analysis, design and evaluation
- Electronic library

Before introducing the two-year integrated course or the special courses, it would be necessary for the LIS schools/departments to ascertain that they have the requisite infrastructure and have achieved the status at par with the science departments to get sufficient grant for maintaining the infrastructure.

6. CONCLUSION

To conclude we can say that the two-year integrated course 'M.Sc. in Library and Information Studies' seems to be the best solution to meet the demands of the present era of electronic information. While pruning the old courses/topics and introducing the new courses/topics it will be more relevant in the advanced technological and information environment. It will enable the graduates to develop essential knowledge and skills in organising and managing the modern libraries and work on all the fronts of information sector with a matching proficiency.

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APPENDIX

Universities offering 2-year Integrated MLISc Programme

S.No.	*Name of University*
1.	Andhra University, Waltair
2.	Birla Institute of Technology, Ranchi
3.	Bishop Heber College, Bharathi Dasan University, Trichi
4.	Gulbarga University, Gulbarga
5.	Karnatak University, Dharwad
6.	Kuvempu University, Shimoga
7.	Mangalore University, Mangalore
8.	Nagarjuna University, Guntur
9.	North Eastern Hill University (NEHU), Shillong
10.	Sri Venkateswara University, Tirupati
11.	University of Calcutta, Calcutta
12.	University of Madras, Chennai
13.	University of Mysore, Mysore
14.	Vidyasagar University, Midnapore

Source: Association of Indian Universities (1997). Handbook on Library and Information Science. New Delhi, AIU.

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Information Technology Course for in-Service LIS Professionals: Need of the Hour for Survival

RANJEET G. DHARMAPURIKAR

ABSTRACT

The LIS professionals who are in service may have passed their MLIS or BLIS course some ten or more years back. The syllabus of such courses provided the traditional knowledge about the science, which seldom allowed a candidate to think about the future trend. Nowadays information technology is spreading its magic on every field. That magic has changed the lifestyle of society. It is important to get accustomed for the change. For this purpose LIS professionals must get an opportunity to learn the techniques of information technology and its application to library. One of the best ways is by attending a Post Graduate Diploma course.

1. INTRODUCTION

Library and information science professionals are at present at cross-roads. The librarians using computers and those not using computers but intend to use computers both are in need of some computer knowledge. The libraries which are using computers are performing their functions with the help of non-LIS professionals. And those libraries which do not have computers but intend to purchase are also asking for help from non-LIS professionals. It is because of very simple reason. The librarians who had passed the degree of MLIS and BLIS ten years back from Indian universities where not taught about the application of computers to libraries. From the last ten years in higher education field the minimum qualification for librarian is MLIS. Different institutions are providing computer training to

working LIS professionals either free or for a fee. These training courses are from one week to six months duration. In such a limited period the participants with very poor grasping power or who do not have any computer background fail to get sufficient exposure. The study material provided in training period gives only theoretical knowledge. The resource persons who deliver the lectures on computer applications during the training are mostly non-LIS professionals. This practise will continue for few more years. Because now the professionals are improving their qualification by joining degree/diploma courses of one year or more than one year duration.

Presently, the author is working in engineering college for the last ten years. He took initiative in library computerisation five years back. He faced lots of problem in the process. Software and hardware problems occurred frequently. He naturally felt very awkward to seek help from others regularly.

Once an advertisement appeared in a magazine regarding PGDLAN (post-graduate diploma in library automation and network) by University of Hyderabad. It was their first batch, immediately the author decided to join the course. He took the admission. Centre for Distance Education, University of Hyderabad is conducting PGDLAN since 1998. The course is intended for working professionals. It imparts good and systematic education.

Like present author other library professionals may also be facing similar difficulties. Such professionals should join diploma course of one year duration. It provides good opportunity to learn more and implement the knowledge in career advancement.

2. WHO SHOULD CONDUCT SUCH COURSES?

Institutes like university libraries which have completed their library automation can undertake such courses. So that they can share their personal experiences with students, as the scope of university library is wider. University of Hyderabad library (Indira Gandhi Memorial Library) is cent per cent automated, therefore they are effectively running the course.

3. CONTENTS OF THE COURSE

The contents of such a course should be designed in a way that each and every topic it teaches should stress the relation with library automation. Moreover, it should teach the basics of computer and

networking, which is an important requirement. The Hyderabad University's diploma course has six papers which help candidates in understanding computers as well as library automation. Topics covered include introduction to information technology, information systems, bibliographic database management systems, library automation and library networks.

3.1 Practicals

Practicals play an important role in any education. Because they take candidates to the actual experience and provide a good opportunity for clearing the doubts while on practicals. In the particals more stress is being given to that portion of syllabus which will help candidates to start the automation activity step by step when they resume their work.

3.2 Contact Periods

This course is a distance education course. To clear the doubts or to discuss the concept the centre conducts contact programmes. This course is spread over two terms hence there are two contact periods for each term. For both terms, the contact period is of fifteen days. During this period candidate gets theory and practical knowledge through the lectures by experts.

Centre is trying its level best to call the resource persons from library science field and to some extent they have succeeded. In future they may not require to call resource persons from outside library science field. Because in-service library science professionals are trying their level best to understand each and every technical aspect of computer and network system.

4. CONCLUSION

PGDLAN probably is the first course of this nature in India for LIS professionals. This course and other such courses will definitely end LIS professionals' dependence on non-LIS professionals. LIS professionals can themselves develop and implement library automation programme independently.

Programming is one of the requirements of management information system. Centre for Distance Education of University of Hyderabad should introduce a suitable programming course, so that the LIS professional can learn the skill of programming.

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Quality Assurance in Library and Information Science Education in India: Challenges and Implications

JITENDRA SHRIVASTAVA

ABSTRACT

This article points out, objectives of LIS courses, need for the quality assurance in LIS Education in India, describes challenges and implications associated with the quality assurance, analyses, role of Govtemment, UGC, professional bodies and LIS professionals. Finally the author strongly recommends an urgent need for quality assurance in LIS education in India.

1. INTRODUCTION

In our country Library and Information Science education is imparted through more than 80 university and institutions and steady growth has been observed in this discipline. The quality of LIS professional affects the quality of library services/information services. Quality assurance in LIS education is need of the hour in terms of accreditation of LIS course, course contents, nomenclature of courses, use of information technology in LIS education, apprenticeship/intership, infrastructure, instruction techniques and system of examination.

Recently, the scope of librarianship and library education has undergone changes with the rapid expansion of knowledge and development of research activities, particularly in the field of science and technology. The traditional character of library service is being transformed. The introduction of computers and automation in libraries has introduced new elements in library housekeeping operation, in acquisition, processing and circulation. Another important development is the expansion of bibliographic services.[1]

Information needs of user are changing. The role of libraries and information centres are also changing. Since last decade specially with the emergence of computer application, telecommunication networks, fax, CD-ROM, E-mail, OCR scanning, hypertexts, hypermedia, videotext, multimedia technology, online databases, electronic publishing, voice mail service etc. There has been change in information seeking patterns.[8]

Information plays a vital role in the society (in research and development, planning, decision making, problem solving and in the learning process) and that an adequate library and information system is, therefore, essential, such a system requires professional library and information personnel of high calibre in sufficient numbers to plan, organise, manage and operate a wide range of libraries, information centres and service.[2]

For qualitative improvement of LIS education with the changing environment there is need to introduce courses based on information technology in the different LIS schools in India. The department of LIS, University of Kerela, introduced a one year Post Graduate Diploma in Information Technology (PGDIT) in 1996-97. The other LIS schools in the country should follow suit as soon as possible.[3]

2. OBJECTIVES OF LIS COURSES

The main objectives of LIS courses can be stated as below:

(*i*) To provide the students an understanding of the basic principles and fundamental laws of LIS;

(*ii*) to enable the students to understand and appreciate the function and purpose of the library in the changing social and academic environment;

(*iii*) to train the students in the techniques of librarianship and management of the library;

(*iv*) to familiarise the students with basics and methodology of planning, designing and developing the information system, and with service at local, national, regional and global level;

(*v*) to provide the students basic knowledge of the application of information technology to the information system and services;

(*vi*) to provide the students basic knowledge of the quantitative techniques including statistical methods; and

(*vii*). to familiarise the students with the application of modern management ideas and techniques in the management of information system and services.[7]

3. NEED FOR QUALITY ASSURANCE IN LIS EDUCATION IN INDIA

Information technology has greatly affected operations of library and information service. As a result of the application of computers and the new information technology which is mostly dependent on computers, dramatic changes are taking place in the library and information system all over the world.

Besides these following are the main reasons for quality Assurance in LIS education in India.

(*i*) To increase quality of LIS students studying in various LIS schools.

(*ii*) There is increasing demand for library automation for better library and information services in the country.

(*iii*) There is increasing demand of trained LIS professionals in the country.

(*iv*) Due to fast development of information technology and its impact on LIS Education.

(*v*) Due to limited job opportunities for LIS professionals.

(*vi*) There are deficiencies in the teaching methodology, media of instruction, course contents, research programmes and in the quality of student seeking admission to the postgraudate courses.

(*vii*) There is increasing acceptance of the right to information as a Fundamental Right of the freedom of information that every class and individual should have equal access to information.[6]

(*viii*) The use of Internet based electronic source are increasing day by day.[10]

(*ix*) Electronic publishing is being increasingly accepted by users.

(*x*) Most of the Indian LIS schools are providing traditional LIS education.

4. CHALLENGES AND IMPLICATIONS OF QUALITY ASSURANCE IN LIS EDUCATION

In India most of the LIS schools are traditional in character. They have limited infrastructure facilities. LIS education is also available in distance mode, standardisation of LIS course in distance mode is a difficult task. Following points cover challenges and implications associated with LIS education.

(*i*) There is no uniformity in the duration of courses at the certificate level. The standard of training and evaluation is also not uniform.

(*ii*) There are deficiencies in the teaching methodology, media of instruction, course contents and research programmes.

(*iii*) There is no central accrediating body for both UG & PG courses in India.

(*iv*) There is no IT (Information Technology) based training schools for LIS teachers in the country.

(*v*) There is no standisation of LIS Education in distance mode in the country as well as regular LIS courses.

(*vi*) Due to fast development of information technology and its impact on LIS Education.

(*vii*) Growing need of IT trained professional in LIS service.

(*viii*) Most of the Indian LIS schools have no infrastructure facilities.

5. ROLE OF GOVERNMENT, UGC, PROFESSIONAL BODIES AND LIS PROFESSIONALS

The role of Government in quality assurance in LIS education in India is not quite satisfactory. Government has not succeeded to generate more job opportunities for library professionals.

The Government should play a leading role to promote LIS education in India and act as a Central Accrediating Body for LIS education and for there purposes a commission on Library and Information Science (NCLIS) should be constituted on the pattern of USA.

Besides these, Government should generate more job opportunities for LIS professionals and disparity in pay scales should be removed among LIS professionals.

The formation of Curriculum Development Committee (CDC) in

LIS was a good step towards maintaining quality in LIS education in India[2]. LIS schools should be founded on the guidelines of the UGC Review Committee Report.

The role of UGC is becoming challenging in the context of growing information society and fast growing information technology, specially in the field of LIS education. There is an urgent need to empower the UGC as central accrediating agency.

The professional bodies like Indian Library Association and IATLIS, are organising seminars, conferences and promoting the status of the library professionals in the country, but they have certain limitations to the accreditation of the LIS courses.

Moreover LIS professional must put pressure on Government to form a National Commission an Libraries and Information Science under Human Resource Development Ministry of India on urgent basis.

6. RECOMMENDATIONS & SUGGESTIONS

6.1 Recommendations of XV IATLIS National Seminar

The XV Indian Association of Teachers of Library and Information Science (IATLIS) National Seminar was held during November 27–29, 1997 at DLIS, University of Mysore. The issues and propositions of each paper were discussed and nine recommendations were drown. Some of the important recommendations among them are:

(*i*) There are two streams of LIS education in India, that is BLISc and MLISc. In view of the fact that a large number of universities are yet to implement the latter and that UGC-CDC has also made a suggestion in this regard of proposing the two streams it is recommended that the stream of courses to be offered be left to the choice of individual universities.

(*ii*) It is observed that majority of LIS Schools lack adequate infrastructure facilities to teach/train LIS student in IT. Hence, it is recommended that the UGC should provide special financial assistance to develop adequate, need-based IT infrastructrue facilities in LIS schools.

(*iii*) It is recommended that the LIS programmes offered through distance education should be improved qualitatively and also be evaluated periodically by a competent authority.

(*iv*) The LIS education in India has crossed its platinum jubilee and a body to regulate, evaluate and suggest education and research programme in LIS is a long felt need, hence it recommended the establishment of a National Council for LIS Education and Research.

(*v*) Keeping in view the recommendations made at various national fora in the past to formulate necessary standards and new norms to evaluate and improve the LIS education programme, it was recommended that an accrediation mechanism be created on the lines of AICTE, MCI etc.

(*vi*) Since 1950s research has been initiated and an upward trend is noticed from mid 1970s to promote this healthy trend and also to guide future research programmes, it is recommended that a research database be prepared as an inventory of research carried out in LIS.[5]

6.2 Recommendations of National Seminar on LIS organised by Cochin University & Co-sponsored by Kerala Library Professionals' Organisation of Science & Technology. (KELPRO)

A National Seminar on 'Changing Trends in Library & Information Science' was held during January 8–9, 1998. This was organised by the University Library, Cochin University and Co-sponsored by the Kerala Library Professionals' Organisation (KELPRO).

Some important recommendations are:

(*i*) Although information technology developed as a multi-disciplinary area in 1960s even in the 1990s we lag far behind the Western world. Immediate steps should be taken to convince the government to spell out a National Information Policy to help the uniform development of information technology in India.

(*ii*) Library professionals need more recognition as they are responsible for planning new information systems.

(*iii*) Acquisition of new media of information particularly publications on CD-ROM and access to on-line sources need to be encouraged in libraries.

(*iv*) Instead of possessing every bit of information required for satisfying the requirement of all uses in a library, the

importance has shifted to providing increased access to the needed information. This kind of access is possible by developing an Intranet and linking the same to Internet.

(*v*) University library should organise frequent refresher coursed with practical training in information handling for library professionals.

(*vi*) Networking and IT applications can be successful only by getting help and advice from computer and communication experts.[5]

6.3 Recommendationd of IATLIS/AGLIS National Seminar

In the year 1997, joint National Conference of Indian Association of Teachers of Library & Information Science (IATLIS) and the Association of Government Libraries and Information Specialists was held at Hyderabad on *IT and its impact on LIS Education and Library Management*. Some of the important recommendations are:

(*i*) Recognising the impact of IT on the education sector in general and the LIS education in particular, it is recommended that the IT and its byproducts such as Internet, CD-Rom, and E-mail should be increasingly and effectively used in LIS education.

(*ii*) It is recommended the LIS student may have internship in libraries which have IT environment for gaining practical experience and confidence.

(*iii*) The multimedia technology has vast potential and utility for teaching LIS subjects. Hence, these products should be acquired by the library schools.

(*iv*) It is unanimously felt that and IT environment may be created in all types of library and information centers (LICS) in the country. Further, the seminar recommended that the LIC's should adopt IT in their management and offer value added services to the community.

(*v*) The seminar recognised the need, relevance and utility of the continuing education programmes in IT for the LIS teachers, libraries and information specialists. It is therefore recommended that short-term and long-term programmes such as seminars, symposia and workshops be organised at regular intervals by agencies like DST, NIC, INSDOC, INFLIBNET, library schools and library associations.[4]

7. SUGGESTIONS AND CONCLUSION

Today we are living in information technology environment. The use of Internet based electronic resources is increasing and electronic publishing is growing and libraries are going towards automation and digitisation. Quality library/information service is the requirement of the day. In the above context quality assurance is essential for LIS education in India.

First, there is an urgent need to establish central accreditating body for LIS education. After fifty years of independence there is no central accrediting body for LIS education. Absence of central accrediating body leads to inconsistency in course contents, examination system, infrastructure, duration of courses. Secondly, there is a need to establish central training council for LIS professionals named as National Council of LIS Education Research & Training (NCLISERT) under the HRD Ministry.

Thirdly, there is a need to improve the quality of distance education in LIS. It should be standardised.

Fourthly, there is a need to empower the UGC, it should act as accreditating body for LIS education, instead of performing recommendatory functions.

Finally keeping in view the above discussions, one can conclude that quality assurance in LIS education in India is an urgent need of the day for improvement in library and information service quality all over the country.

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Quality Assurance in Library and Information Science Education in India

A.K. BARADOL

ABSTRACT

The paper briefly describes the need for quality in Library and Information Science (LIS) education. It explains the different factors to be considered to attain quality in LIS education. Paper suggest that the LIS curriculum should be modified to include the new areas. There has to be a commitment among the teachers and students towards continuous professional development. All these put together will make an institution a quality institution, the education a quality education.

1. INTRODUCTION

The quality is the concern of every organisation, institution, agency which provides service. It has become essential to develop the quality products which are acceptable to majority of the people concerned. It is equally true about education. The educational institutions have been giving importance to the concept of quality in education. It is not easy to measure the quality. It is fairly accepted that quality means excellence and superiority. The quality is an exclusive attribute.

2. NEED FOR QUALITY IN LIS EDUCATION

In recent times the market forces are controlling many activities, services and organisations. The LIS education is not an exception. The institutions which are imparting the LIS education have to survive on their own. In future the funds will be available only to the quality institutions, not to all the institutions. Every institution has to main-

tain the high quality or standard. It is needed now more than earlier. India is aiming at becoming an Information Technology (IT) super power within a decade. The IT would be used in the services in the libraries and information centres. It is high time to produce a pool of quality Library and Information Science (LIS) professionals to meet the future needs.

3. QUALITY IN LIS SCHOOLS

Narayan[1] mentions following six fundamental requirements for achieving a total quality approach:

- Top management commitment
- Attitude change
- Continuous improvement
- Strengthened supervision
- Extensive training
- Recognition of performance

These requirements can be applied to LIS schools. The managements of schools should reinforce total quality in all their deeds. Every institution is concerned with the quality of different subsystems. Schools are concerned with the quality of subsystem, *viz.* students, staff, the environments, etc. To bring in the total quality in the schools they must follow certain steps. The steps include commitment, working as a mission, placement, continuing education, supervision, accreditation, continuous improvement, involement of externals and recognition.

The Quality Assessment Agency of UK[2] has suggested that for effective quality assurance the aspects that need to be monitored and assessed are:

- Infrastructure and learning resources including student support
- Curricula design, content and development
- Teaching and learning methodologies
- Evaluation mechanisms and student progression
- Linkage with research and community.

4. COMMITMENT

The commitment includes the commitment by the staff, the adminis-

tration/management. The management differs from one type of school to other type of school. For the universities it is the different authorities of the university, for the private colleges it is the college managements or trusts, in case of government colleges, it is the state government. All those concerned with the total quality should make a verbal commitment. It is not enough to make the commitment in writing. It should be visible in actions. It should be demonstrated by staff and management. The teachers must perform their function in a more rigorous way, with greater zeal, interest and involvement. The commitment should be made in the verbal form of communication, newsletters, annual reports, handbooks, prospectus and through such other publications. When a commitment is made the same should be accepted without any further change or dilution in it. The executives of the LIS schools like the heads of the departments, chairman of the Board of Students, the person in charge of admissions, the person incharge of examinations have to be trained to understand what is meant by commitment.

5. WORKING AS A MISSION

The entire work in the LIS school should be on the model of a mission. The separated units have to be united. The frequent meetings help unite the separated entities. There should be formal and the informal meetings in the schools. Both together would lead to the development of a common vision. A written document about the mission statement should be prepared and accepted. This would provide the staff, researchers, students a clear vision about the purpose of the school. The mission statements help the LIS school in providing the proper direction to their efforts. While discussing TQM in education Manu says, 'In the school set-up all those who contribute to the system must be involved, including employees and students. Also everything that contribute to the system must be involved including the environment and strategic planning.'[3] If all these components perform their respective functions as a mission it is possible to achieve the total quality.

6. QUALITY TEACHER

To bring in the total quality in the schools the teachers have to be of very high quality. Here the high quality means the required qualifica-

tions, skills, experience and such other things. Education Commission observed that of all the different factors which influence the quality of education and its contribution to national development, 'the quality, competence and character of teachers are undoubtedly the most significant'.[4] This statement emphasises the quality of teachers. In practice on many occasions this is not properly implemented.

7. PLACEMENT

The placement is a very significant aspect in any educational system. The LIS education is no exception to this. The placement should be taken up as a part of education. The possible/potential employers have to be contacted by the schools. Th graduates have to be persuade to join the institutions depending upon the basic qualifications, etc.

8. CONTINUING EDUCATION

The continuing education keeps the teaches up to date in the subject. The Contmung Education Programmes (CEP) are essential for achieving the total quality. The programmes like refresher courses, seminars, conferences, symposias etc. are being conducted by different organisations, institutions and agencies. The teachers should attend such programmes. It is not enough if the teachers attend only two or four such programmes in their entire service. They should attend the CEP regularly. The National Policy on Education viewed pre-service and inservice training as inseparable, teacher education being a continuous process.[5] To achieve the quality in LIS schools the teachers will have to undergo the in-service training. This is all the more necessary now when we are forced to teach Information Technology (IT) to the students. Training in the new technology, methods and services makes teachers dynamic for improving the performance. The technology has forced every one involved to train the teachers first so that in turn they can train the students. The training has to be very extensive one.

9. SUPERVISION

The supervision which was once seen and understood as authority is no more valid now. The colleagues have to be given self-responsibility. The self-responsibility would improve the quality of teaching,

which would in turn help to achieve total quality. The University Grants Commission (UGC) has introduced the self-performance appraisal system. The same should be made more rigorous for LIS teachers at the university level. For the LIS teachers at the polytechnic level a different of mechanism could be evolved on the similar lines of self-performance appraisals.

10. ACCREDITATION

To achieve the total quality in LIS schools the accreditation is essential. Unless the schools are accredited the quality can not be achieved. Rigorous parameters should be applied before awarding the accreditation certificate. A periodical accreditation renewal should be mendatory for all the LIS schools in India for achieving quality.

11. CONTINUOUS IMPROVEMENTS IN CURRICULUM

For achieving the quality in LIS education and further maintaining it the continuous improvements in various aspects are required. This requires updating of the syllabus/curriculum, improving the status of teachers and new equipments. etc. There has to be continuous improvement over the previous results of any activity. The science and technology is developing at a very fast rate. To include the scientific and technological developments, the LIS curriculum should be revised whenever there is a need. There has to be transparency in the admission and faculty recruitment. For various academic activities the attempt has to be made to include all the teachers, students, researchers in the learning process. The students should help themselves and help others in learning.

12. RECOGNITION

Any good work should be appreciated and recognised. The recognition will create an awareness among the teachers concerned for being more dedicated and quality conscious. The management of LIS schools must recognise that achieving innovation requires constant feedback and positive support. IT is not enough if only it is recognised, the support should be extended to every employee.

13. CONCLUSION

The LIS educational institutions should be assessed and accredited. By just looking at the report card or certificate of the LIS graduate it is difficult to know the quality, standards and skills. Some countries already have established the agencies which can assess the quality in the education. In India the National Assessment and Accreditation Council (NAAC) is the agency doing the assessment and accreditation work. At present the assessment is done at the institutional level, *i.e.,* university or college as a whole. Pawar says, "Departments of universities are, however, assessed by the UGC while considering cases for special assistance."[6] The departments should be assessed as a unit not only for special assistance but also for the allotment of any grant. To bring in the quality in the university department, the department as the unit has to be assessed. This assessment performance should be made as the basis for the allotment of grants for equipments, staff, etc. This would lead to assurance of quality in LIS education in India.

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Quality Issues in Library and Information Science Education

PRATIBHA A. GOKHALE

ABSTRACT

In a global economy, the information professionals are to be better aware of wider spectrum of sources of information—which include traditional literature, grey literature and documents in electronic format. This requires experience, quality education and competencies to take up the challenge of managing the knowledge based information system. This paper attempts to highlight in a nutshell, how library science schools can introduce better training to impart quality education to information science professionals of the future.

1. INTRODUCTION

Education in any profession is bound by the complex and reciprocal relationship of training and prevailing practices in the profession. The filed of Library and Information Science is not an exception to this. Every professional environment is unique with its own individualistic traits. With the intensification of research activities during recent years, the need for documentation and management of information in higher education, in developmental work and in research, has became more pronounced. The goal of any such activity is to collect information from the natural world, process it and then structure it into a comprehensible format, so that it can be asssimilated. Any piece of information needs to be tested, experimented, scrutinised and verified on several parameters before it is to be utilised for meaningful purpose. Information is a self renewing resource; which if managed properly,

can stimulate thinking, improve levels of productivity and can ensure consistent maintenance of quality. Information can best be managed by no other than professionally trained librarians who are at the helm of the business of managing information.

2. WORLD OF INFORMATION AND INFORMATION MANAGEMENT

Information management (IM) is integral to library and information science. IM may be regarded as value added librarianship. Most of the changes in IM have taken place in last two decades. The shifting paradigms in the world of information and the problems in IM can be summarised as follows:

Earlier scenario	*Changing Paradigms*
– Library	Resource centre
– Reading	Information searching
– Printing	Electronic printing
– Publishing	Creating web pages/websites
– Writing	Writing for electronic documents
– Limited varieties of reading materials	Wide range of formats for reading
– Limited and organised resources	Unlimited and scattered resources
– Copyright	Lincence to disseminate

Features of Information	*Problems in IM*
– Scatter of information	Difficulties in selecting and evaluating
– Dynamic nature	increased level of volatility
– Interdisciplinary nature	Boundaries not sharp
– Varied presentation formats	Lack of standardisation in bibliographic description

Thus, the major challenge for library and information manager today, is to understand the pattern of flow of information and to plot suitable path finders for controlling this flow. In the changed scenario, the library administration involves management of technology,

management of collection in the heterogenous forms, systems analysis, personnel management, processing of information, controlling of dissemination patterns and also educating the users. It is expected that the librarians develop a level of sophistication in managing libraries and in imparting services. The technology should be adapted by libraries at various stages as an "appropriate technology." There is an obvious responsibility on the library schools to impart education for all-round development of the individual for adjusting oneself to different working situations. The schools are committed to prepare the professionals for future by providing them with a sound base for research, investigation and stimulation of new ideas.

3. EDUCATION IN LIBRARY AND INFORMATION SCIENCE

The essential building blocks on which the aspects of library science education are to be addressed are the conceptual issues, pedagogical issues, technical issues, information policy and professional culture. Different responsibilities will be thrust upon librarians as their work becomes a vital component in managing the constant flow of information – particularly in controlling the scholarly electronic publishing, preserving intellectual property, protecting copyright, preserving priceless collection and creating an order out of the chaos of information. A planned programme of education for this purpose, is of vital importance which would be reflected in the curriculum that is designed for this purpose. A curriculum indicates the dimensions of the teaching-learning process. Curriculum development is a process than purely a product. Syllabus is an essential component of this process, bound within a framework. It should take into consideration the changing social landscapes, so that the professionals are developed in such a way that they are able to withstand the demands imposed on the profession. Syllabi of LIS education will have to be re-examined to take account of the ideological, vocational and technological changes.

4. SKILLS NEEDED BY THE PROFESSIONALS

Notwithstanding some peripheral questions like availability of infrastructural facilities, availability of teachers, funding etc., there is a marked degree of realisation towards some of the fundamental issues regarding skill and competencies that will be needed by profes-

sionals. The skills acquired during early career stages are not likely to suffice beyond ten years. Future generation of information professionals will increasingly be working with non-librarians. They will be establishing rapport with specialist in computing, systems, networking, finance, HRM, marketing and so on. The services will also be more user-oriented. They will have to acquire skills and competencies in certain areas, hitherto not attended seriously and yet maintaining a track with traditional skills. There is a tremendous output of developmental literature in the form of grey literature like unpublished seminar papers, conference proceedings, lecture notes, background reading material, pamphlets, newsletters, house journals, theses, dissertations, application notes, safety data sheets, non-commercially available official publications etc. This literature contains primary data which is up-to-date and contains latest information which is much relevant to local situations. These documents have an inherent property to supplement several of the users' needs—if brought to the attention of the users at right time. However, grey literature has remained as a secondary domain for librarians while organising the reading material in the library. Accessibility and dissemination of this literature has a direct relevance to quality issues while imparting library services for the end user. The qualitative performance is directly linked with the skills and competencies which will have to be acquired gradually by the professionals. They can be briefly summarised as under:

- Traditional classification skills will have to be extended to organise non-book and non-print material efficiently for quick information retrieval. These will have to be coupled with indexing skills. Developing thesaurus based key-word indexes for managing databases is essential. The indexing component from the syllabi must be strengthened. However, merely increasing the units in the syllabus without monitoring their effectiveness is of limited use.
- Knowledge of cataloguing must commensurate with international standards having clear understanding for identifying the different fields and physical forms of presentation. These skills will have added qualitative value when accompanied by selection of right descriptors, annotated bibliography, correct referencing and citations.

- Realisation of local needs in developing collection for imparting information services. Merely having a stock of costly reference sources is not beneficial always.
- Processing and organising grey literature for improving its visibility and utility in the libraries and for retrieving the contents of information from it.
- Skills for preparing union catalogues at local, regional and national level.
- Developing managerial outlook for finance management, preparation of budgets, personnel management, preparation and implementation of PERT/CPM charts for various library activities.
- Excellent communication skills—both, oral and written with "aggressive" politeness to justify a stand.
- Professional attitude to critical and objective thinking for problem solving.
- Knowledge of networked systems, subject gateways to provide access through keywords in specific subjects, workable understanding of expert systems.
- Ability to critically evaluate software, the Internet based information and CD-ROM databases, so as to make right choice for purchasing.
- Knowledge about metadata standards for discovering resources on the web.
- Skills and competencies for launching websites for libraries, writing in HTML and uploading information for wider dissemination.

5. NATIONAL VOCATIONAL QUALIFICATIONS– U.K. MODEL

In 1986 in U.K., a white paper titled, "Working together – Education and Training (cmnd 9823)", established the National Council for Vocational Qualifications. Its aim was to create a national framework of vocational qualifications which would be comprehensive and understood by employers and employees alike. The National Vocational Qualifications (NVQs) were based on standards of performance defined by employers. The responsibility for defining standards of competence rested with the employment sector. The task of develop-

ing, implementing and maintaining standards was entrusted to the lead body for each sector. The NVQ standards were set up to enable people at different working levels in all occupational sectors to obtain qualifications needed for particular sector and to increase the skills of the U.K. workforce. Such standards and NVQ's were launched for the information and library service sector also and the Royal Society of Arts (RSA) was selected as the lead body for the ILS sector. The ILS-NVQs are available for five different levels and the levels reflect the degree of complexity and/or management responsibility within the job. Training needs of the candidates are identified and accordingly level of NVQs is suggested to the candidate. After successful completion of the training, competencies are assessed and NVQ is eventually granted to the candidate. For the candidate, gaining the NVQ requires commitment, time management, collecting relevant evidences, acquiring report writing skill and developing other competencies that are needed for the job.

5.1 Advantages offered by NVQs

- NVQs are progressive and offer scope for career and personal development.
- They are related to work carried out by an individual and have a direct impact on the performance and quality of services given.
- They give opportunity for lot of interaction with colleagues, supervisors and users as well.
- They offer flexibility during training and staff can continue working at their pace.
- Candidates get credit for what they can do competently.
- Universities offer credit transfer into degree courses for those who hold NVQs.

The employers of NVQ accomplished staff experienced a direct impact on performance and ultimate quality of the service. But the aim of the NVQ is to complement professional education and not to replace it.

6. QUALITY ISSUES IN LIS EDUCATION IN INDIA

Quality is an elusive element and it is highly subjective. Measuring quality is rather difficult in service sector. The quality concept evolved for industry sector can be suitably adopted in managing information

based services in libraries. It is possible to develop competency based learning for students of Library and Information Science and for working librarians. The U.K. example mentioned above can be thought of as a model for initiating training programmes.

Education has a broader function than gaining an employment but it does concern employment. It is a common experience that good academic performers need not be always competent executives and the reverse is also true. Most of the candidates do not have the skills which employers are looking for. The mismatch between the available workforce and employers' requirements can only be balanced by adopting following means:

- Intensive and rigorous short term training courses
- Continuing education programmes
- Workshops
- In-service training
- Project based learning
- Computer assisted instructions
- Developing "Intelligence Learning Technology" by having self teaching guides or "do it yourself" series.

While library science schools will continue to conduct the degree granting courses, their syllabi have to be re-designed and revised more frequently than the practice hitherto. They should take into account:

- Developing creativity, curiosity and thinking skills among students
- Developing communication skills
- Public relations savvy.
- High tolerance for rapid changes in technology

The professional bodies, library associations, information centres, bodies like INFLIBNET may also actively come forward to share the responsibility of imparting training which cannot be covered within a fixed framework of syllabus. Their current programmes and efforts are perhaps falling short of the demand and the pressures. A planned action plan with rigorous implementation is needed for the purpose. The plan may be worked out for different levels – for students, practicing librarians in different sectors and for teachers in Library Science. Availability of adequate teaching staff engaged in full time

teaching and research, skilled demonstrators to give practical training, and a team of research associates to enable departments to take up major research projects—are some of the issues which should be considered seriously.

7. CONCLUSION

The success of quality management in library and information science depends on how well the education and training programmes can create a workforce that measures upto challenges and opportunities in the information field. It will depend upon the recognition of the implications of the dynamics of the new environment and the extent to which LIS education can respond adequately and swiftly. A clear directive and decision is needed for determining future strategy. Efforts may also be directed to identify such professionals in the country who possess good leadership qualities and vision to take the profession ahead successfully.

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Quality Library and Information Services for the Distance Education Students

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ABSTRACT

Learners of distance education programmes do not enjoy access to regular classes and constant help and guidance of teachers. Contact classes are not sufficient enough to deliver the educational material and self learning lessons may not provide the comprehensive and uptodate information in the concerned subjects of study. High quality library and information services for the students of distance education can bridge this gap by providing additional relevant and up-to-date reading material. This paper includes an analysis of library and information needs and problems of distance education students of the University of Jammu. On the basis of this study suggestions are made for enhanced and better quality library and information services, the ways to apply modern information and communications technologies for facilitating information access and improving the quality of library and information services for distance education programmes.

1. INTRODUCTION

India is having one of the largest educational systems in the world. There are about 250 universities, more than 10,000 colleges and on an average a new college is set up every day in this country. Inspite of these facilities higher education is not accessible in India to more than six per cent of the population. The existing higher education facilities are not sufficient enough to fulfill the needs of large number of aspirants of higher education. In addition to a large number of freshers, a number of employed people aspiring for higher education are deprived of this facility.

To meet the growing demand for higher education, the number of distance education institutions is growing everywhere in the world. "More than half of the conventional universities in the U.K. are involved in post-graduate distance learning provision".[1] The delivery of education at homes and work places and customised learning provisions have helped in the growth of number of distance learners almost all over the world. Distance education institutions are usually more sensitive to the societal demands for education and for their success these institutes are required to quickly plan, organise and reorganise, revise and update their course material so that they may be able to offer need based courses and state of the art course material. Timely delivery of quality course material and student support services is a matter of growing concern for most of the distance education institutions.

The electronic media offers a wide range of facilities and conveniences to distance education students such as delivery of electronic documents, student-teacher contact, video and audio conferencing, student assignment delivery and evaluation, collaborative learning through network of students, creation of discussion groups, etc. The development of virtual classrooms, teleconference facilities and creation of virtual libraries have helped in overcoming the barriers of distance in distance education. The multimedia and the web pages offer dynamic media for distance education student and have made the process of self learning much more easier and convenient. The Internet offers a vast store of latest information which the students can search to supplement their study material. Besides the timely delivery of desired information, the interactive electronic media offers the facility of information search at any time freely available with the distance learners. "The recent example of instituting 'Smart schools' is an eye opener to a movement towards liberating students from survile dependence, what they need is counselling and guidance".[2]

The potential of the existing information technology has almost transformed the delivery of distance education programmes and facilitated a learner centered mode of distance education. It has helped in the diversification of distance education and proliferated the educational opportunities far beyond the close confines of a classroom and opened immense opportunities for those who aspire and endeavour for education. Advances in information technology made the

stewards of education realise that anything that can be studied in the classroom can equally be learnt through the distance education mode.

The growth and expansion of distance education programmes have generated considerable interest in student support services in general and library and information services in particular. Library and information services to distance learners is a subject of growing attention of academic librarians and professional associations. Practices and policies of higher education institutions' libraries to support open and distance learners are being reviewed. Some international examples of best practices[3] have also been reported in the literature along with a review of literature on the subject. A study of the Mercer University Library[4] describes challenges being faced by libraries in supporting distance learning in terms of providing distance learners, the books, periodicals, reference resources, help of skilled reference staff, access to the Internet resources along with mention of useful websites providing information on distance education. A report[5] on international trends for library services is published by V. Brack which also includes evaluation of different electronic document delivery system in use in universities in the U.K. A study[6] conducted by Baker and Marquardt describes the models of service including branch campus libraries, community college partnerships, profit making educational enterprises, public libraries and services for homebound learners. The Association of College and Research Libraries (ACRL) has provided guidelines[7] for Distance Learning Library Services. Johnson[8] describes how Wheelock College Boston used information and communication technologies to support a two year Master degree programme and how the library support services such as the web search, customised information searches, bibliographic searches, etc. helped this programme receive accreditation. Watson[9] points out the various challenges of Third World distance librarianship in the new millennium.

2. DIRECTORATE OF DISTANCE EDUCATION LIBRARY

To meet the educational needs of students in the far flung, inaccessible areas, to provide education to inservice people, to offer educational opportunities to those who could not get regular admissions and motivated by the desire to provide education at the doorsteps of learners, the university of Jammu set up the Institute of Correspondence

Education in the year 1976. The institute was renamed as Directorate of Distance Education in the year 1994. The Directorate runs courses in the subject areas of Law, Commerce, Economics, Education, English Literature, Urdu, and is likely to start a Post-Graduate Diploma in Computer Applications from the session 2001–02.The Directorate registers a large number of students every year (Table–1) and to maintain quality of education admission in certain subject areas have now been restricted *e.g.* B.Ed. course. The Directorate of Distance Education will be shifted to the newly constructed building in the near future which also provides ample space for organising a modern library.

Table–1. Registration of students at Directorate of Distance Education

Year	*Number of students registered*
1995–96	4788
1996–97	2358
1997–98	3000
1998–99	5253
1999–2000	5600

The library of the Directorate of Distance Education is managed by a professional staff of two persons *i.e.* one Assistant Librarian (Selection Grade) and one Professional Assistant. The increasing financial allocations for the library indicate the growing interest of the authorities for developing this library (Table–2).

Table–2. Financial Allocation for the Distance Education Library

Year	*Amount Allocated*
1995–96	Rs 80,000
1996–97	Rs 1 lakh
1997–98	Rs 4 lakhs
1998–99	Rs 4 lakhs
1999–2000	Rs 4 lakhs
2000–2001	Rs 8 lakhs

The library presently has a collection of 19000 volumes and every year adds a number of quality books selected by the faculty (Table–3).The library has also set up an extension at the Directorate's Study Centre at Degree College, Kathua to provide library support to the distance education students of that region.

Table–3. Year wise Addition of Books at the Distance Education Library

Year	*Books Added*
1995–96	523
1996–97	234
1997–98	1168
1998–99	1275
1999–2000	1351

With the object of assessing the present library and information problems of distance education students, with the ultimate aim of improving the quality of library service, a survey was conducted. The data was collected through a questionnaire and personal interviews. The data supplied through the questionnaire and personal interviews was analysed to have an insight of students needs and their perceptions of library problems.

Eightyseven per cent of the students surveyed regularly use the library of the Directorate of Distance Education. According to them the staff of the library is cooperative and helps readily as and when their assistance is required in process of information search. The major problem regarding the library, as reported by majority of students is lack of space in the reading area and non-availability of peaceful and congenial environment in the library for study, lack of comfortable library seating facility etc. The students also demanded that more number of books should be issued and books should be issued for a longer duration. They reported that in certain areas sufficient number of copies of the textbooks are not available in the library and they have to wait till such books are returned by the borrowers. Some students reported that certain books they require to read can only be used within the library premises and are not issued to anyone for home reading.

About three fourth of distance education students are prepared to pay an annual fee if the reading facility is offered to them in the central library of the university of Jammu. Almost fifty five per cent of the students opposed the fee based information search service and rest of the students do not mind to pay if fee based information search and bibliographic service is organised by the Directorate of Distance Education Library of the University of Jammu. However eighty per cent of the students are prepared to pay if photocopies of material required by them are delivered by the library at their homes, work-places through correspondence. They thus supported the fee based document delivery service.

About 70 per cent of the students wanted that the library should plan and organise the electronic delivery of relevant information. Sixty per cent of the students demanded that the library should develop virtual library based resources relevant to the needs of distance education students. Only forty five per cent of the students supported the electronic mail based reference service from the library. Interestingly none of the students who demanded these Internet based services had a home computer.

3. CONCLUSION

To conclude the Directorate of Distance Education Library has high quality collections of relevant documents and qualified library staff. The only problem with the library is that it is not housed in a proper library building and does not possess spacious reading area. However, this library located will shift in the near future to its new premises in the newly constructed building of the Directorate. The problem of space will be overcome and new furniture will be available to readers. The considerable increase in the financial allocation by the authorities indicates that the library authorities are taking interest in developing its resources. The library is also planning to provide the Internet connectivity for the benefit of distance learners. With its shifting to new building and with the availability of the Internet facilities, the library will be able to offer a wide range of information resources and high quality library and information services to its users.

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Towards Total Quality Management in Book Bank Scheme: A Case Study of Mahila Mahavidayalya, Nagpur

CHITRA REKHA KUFFALIKAR

ABSTRACT

The paper defines TQM in the simplest words, its importance, need and application to academic libraries. It also identifies the role of UGC in higher education and the extension of these concepts to the various Students Welfare Schemes *vis-a-vis* Book Bank Schemes.

The paper concludes with a positive note that, if the 'Bank Book Schemes' are designed with the 'Quality Assurance' in mind, evaluate themselves regularly and improve continuously on these lines, they can set a model towards achieving 'Total Quality Management' and can serve as a guideline for such other ventures.

1. TOTAL QUALITY MANAGEMENT IN LIBRARIES

Quality in the library world is often used synonymously with excellence and efficiency. It cannot be defined or measured precisely. Modern Q.M. theory regards the definition and measurement of quality as an essential pre-requisite of proper Q.M.

Dr. S.L. Sangam says, 'TQM' is a modern operational philosophy which could be universally applied to any service sector and Quality Management could be termed as the most vital component for survival in the new millennium today. Libraries of today need to be updated with the developments in the higher education curriculum and are 'supposed to meet the ever-rising expections of the users for

the amount of services provided and the quality. The ever-growing changes in the society makes direct impact on the higher education bringing more pressure on the libraries'. The traditional systems along with the new technologies and development of an integrated system can be positively thought about.

2. SOME CONCEPTS OF TQM

The famous gurus of the TQM, Edward Deming, Joseph Juran, Philip B.Crosby have identified various steps towards achieving T.Q.M. but the ones which I feel the best are those laid down by Joseph Juran . He has identified ten steps towards 'Quality Improvement'. They are;

(*i*) Build awareness of the need and opportunity for improvement; (*ii*) set goals for improvement; (*iii*) organise to reach the goals; (*iv*) provide training; (*v*) carry out projects to solve problems; (*vi*) report progress; (*vii*) give recognition; (*viii*) communicate results; (*ix*) keep score and (*x*) maintain momentum in improvement.

Hence, richness of resources like total number of books, large size of the library and staff cannot be positively taken as an indicator of quality, but it should clearly spell out as to how best the library meets or exceeds customers satisfaction.

3. ACADEMIC LIBRARIES

College and university libraries have been considered by our planners as crucial for future development. The major factors for the rapid growth of academic libraries in India are the five year plans, the various educational commissions, committees and the role of various library committees headed by Dr S.R. Ranganathan.

Ensuring optimum utilisation of facilities, promoting innovation and change, linking education to emerging career patterns, viability and equalisation of educational opportunities for weaker sections of the society, and those belonging to educationally backward areas, is the need of the hour.

4. UNIVERSITY GRANTS COMMISSION: ITS ROLE IN HIGHER EDUCATION

University Grants Commission has rightly recognised the value and importance of a well-equipped and organised library system and its

role by regularly providing appropriate grants and funds to the academic libraries to purchase books and journals, to start welfare schemes for students, construction of library building, furniture and equipment, appointment of library staff etc.

The ninth plan period 1997-2002 have mainly four aims;

– Improvement of standards and quality education.
– Removal of social disparities.
– Restructuring of the courses.
– Grant of automous status to qualifying colleges.

Improving the reading habits of the students and bringing the quality aspect in education are the main aims of UGC and accordingly a number of programmes are chalked out.

5. BOOK BANK SCHEMES

Thomas Carlyle at the opening of the London Library in 1841 rightly remarked that, 'A man can do more with a book in his own apartment in solitude of one night than, in a week, in such a place as British Museum'! 'Book Banks' have been quite synonymous to the lending libraries attached to monasteries and charitable institutions but later, emerged in schools too. Its main objectives was to help the poor and needy students specially, those coming from the weaker sections.

5.1 Development of Books Bank Scheme

The every existence of libraries came into being for making the books available to its members but, the availability of text books to the students in the colleges through the libraries was a great concern.

The UGC undertook a scheme of Book Bank for this purpose. Colleges which have the potential and are fulfilling all the eligibility norms are entitled for 10 per cent grants for books, journals and strengthening the books bank scheme.

The mention of BBS under UGC and the guidelines regarding the same were first laid down in the 3rd five year plan, specially in colleges. In 1963-64 the UGC provided grants to acquire multiple copies of costly text books recommended in all disciplines. UGC allowed 30 per cent of library grant to be utilized for the Book Banks. Thus, UGC played an important role in promotion of Book Bank programme in the country. Book bank schemes have been recognised as a vital part

of the library and have grown over the years. The 20 point programme of Late Smt. Indira Gandhi also incorporated provision to help the needy and poor students by providing text books. Amjad Ali in his article 'Book Bank in action' has even quoted the Government resolution dated 7.2.73 wherein the UGC has provided financial assistance to 'Engineering colleges'. Madhuri R.Shah has made the following observations:

'Another step forward in the programme is the setting up of 'Book Banks' for the supply of text books to the students at reasonable prices, specially for the benefit of the weaker sections of the society. Book Bank have been in operation both at the school and college level. The University Grants Commission has also relaxed the minimum condition of enrollment for setting up 'Book Banks' so that, colleges are eligible for the assistance. This measure will enable colleges situated in backward areas to take advantage of the Scheme. (Out of 2866 colleges eligible for 'Book Bank grants' 2431 have already started the BBS with the UGC support).

A number of studies regarding the utility of the book bank scheme have also been conducted. Remarkable among those being the one conducted at the Zakir Hussain College of Engineering and Technology, Aligarh Muslim University, Punjab Agricultural University, Haryana Agricultural University, Hissar and Suratkal Library, Karnataka.

5.2 Finance and Acquisition Policy

The initial capital investment for setting up the book bank scheme is the most important phase and updating the same with the current course material is an additional liability. (Which is restructured after almost every three years). Adequate funds and reinvestment, are the prime necessities to start a scheme on sound footing and to feed it continuously social welfare departments of some state government also provide funds for the same. Book Bank Schemes usually run on no profit/no loss basis but as the publishing industry is undergoing vital changes and the prices of the books are skyrocketing almost every year Book Bank Schemes have also witnessed major changes in the past thirty years. Though, no academic library designs the BBS to earn profits, at the same time, BBS are definitely being projected as profit-making schemes wherein, the scheme has the benefit of (*a*) satisfying the user needs specially, those coming from the weaker

sections (and cannot buy costly books for want of money and resources) (*b*) distribute the textbooks in a systematic fashion (*c*) ease the work on the daily issue counters (*d*) cannot cover long distances for making use of the university libraries for want of time and other problems (*e*) generate enough resources to equip the library qualitatively.

Guidelines regarding the security to be deposited in the beginning and amount payable to the students at the end of the year (after the returns of Books) are also not clearly demarcated. Some colleges return the entire money deposited by the students but, most of them retain 10 to 20 per cent of the deposited amount as service charges and the total amount so collected at the end of the year is utilised as per the norms laid down by the the library committee etc. The amount collected every year is deposited in a separate account operated as per the norms laid down as above. Fines paid by the students (for late returns of Books) also differ in every college. In case of loss of books, current price of the book is recovered along with the late fine and, the amount so collected is utilized as per the directions of the library committee. Lost book is usually replaced by the fresh copy of recent edition.

5.3 Special Features and Merits of Book Bank Scheme

- Book bank are store (pool) of text books. Some general and reference books also are part of the scheme.
- Book Banks are mainly created to help the economically weaker classes but, those who are well-off can also be benefitted.
- Books issued can be kept for the whole session/semester on rental basis. In same cases, the books are issued absolutely free to poor students.
- The operation of the scheme is governed by a set of rules laid down by the libraries. The amount collected is utilised for purchasing new books or towards strengthening the scheme and improving the qualitative services of the library.
- Book banks facilitate as additional library services wherein more number of users are benifitted. For proper functioning of the scheme, funds are regularly generated for the purchase of textbooks and some copies are rotated year after year until there is a restructuring of the syllabus.

5.4 Demerits of the Schemes

- Students become mentally free once books are issued to them under this scheme and they do not bother to go through the other reference books available in the scheme. At times, the routine use of library books also become scanty which is extremely harmful.
- The dependence on the primary sources are less and less and hence, the basic concepts of the subject ate not always clear.
- Text books become obsolete very fast. As the demand is for the recent editions, the older editions remain unused.
- In absence of enough security, there is every possibility that, students avoid returning the books in time. Rising cost of books is also a serious problem.
- No additional staff is available for this work and hence, this creates pressure on the existing staff specially, where the library staff is not sufficient or is not trained to handle the work.

6. CASE STUDY

6.1 Historical Background of the College

Under the ageis of Stree Shikshan Prasarak Mandal, Mahila Mahavidyalaya was established in the year 1971 which is one of the most renowned and oldest institution of Nagpur. The main aim of the college was to provide education to women, those coming from weaker sections.

The college started receiving grants from the UGC under (2F) in the VIIth plan period and the major development of the college was noticed by one and all. The college is situated in an area where the strata of the society comes from the lower income groups. Quite a few students enrolled in the college do part-time jobs and even work as domestic help. Today, the college has almost 1700 students with five Post-graduate and one professional technological courses being introduced from this session. About fifty highly qualified staff members are attached to the college.

6.2 Library

The college has an independent library with a stack room of (32'×15') and reading room of (20.4' × 23.5'). A reading room with a seating capacity of sixty students and an independent stack room which can

accommodate about five staff members at a time in its reference wing. The library has a rich collection of almost 13,000 books, eighteen magazines and seven news papers. One professional librarian, one library clerk, two attendants manage the library. The library has a small reference cell where; standard reference tools are kept open for the staff members and to Post-graduate students.

6.3 Book Bank Scheme in the Library

On heavy demand from the student community and recommendation of the library committee the scheme was introduced in the college in the year 1990 with just forty students of the senior college with a deposit of Rs. 30 per student. Rs.20 was returned to the students after the final examination (Board/University) and return of the books to the library. Rs. 10 was retained by the college as service charges. A fine of Rs. 1 per book per day changed to Rs.2 per day per book 1995 onwards was charged for late return of books. Three text books on different subjects were issued to each student, after taking a formal application from each to ascertain their choices. Text books with limited copies (out of print/rare books) etc. Were excluded from the scheme.

6.4 Development of the Scheme in the College

The scheme which started with just 40 students became extremely popular after 1995 and has seen steady development. The deposit amount which was Rs.30 was revised by the Library Committee to Rs. 50, 1993 onwards wherein the students were paid back Rs. 30 at the end of the session and the college retained Rs. 20 as service charges. The Post-graduate students (M.A. Economics which began in 93–94) were charged Rs.100 (for two books) and returned Rs. 60 at the end of the session. The college retained Rs. 40. Today, the scheme has 153 (1999-2000) students taking advantage of the scheme and 145 students have already been enrolled under BBS this session (2000-2001) too, which is still progressing, in spite of late announcement of results, admissions etc.

6.5 Finance

The college has not applied for the UGC grants till date for *want of adequate Library personnel and other technical problem in the college. The college looks forward to do the same in the near future.*

The college invested Rs. 5000 initially for the purchase of text books and almost 7000 (after restructuring of the syllabus which is usually done every three years). Hence, the college has spent about Rs. 12000 so far, for the purchase of books. The cost of the text books in the Arts faculty ranges (between Rs. 20-200), which are recommended and purchased at 20 to 25 per cent discount. Text books which are no longer a part of the syllabus are regularly weeded out as per the recommendations of the committee. Damaged and mutilated books are also weeded regularly. The amount so generated is also used for the various welfare schemes of the library. The BBS collection is maintained in a separate shelf class wise duly processed with a BBS stamp etc.

6.6 Procedure Adopted

(*i*) The students of the college are introduced to the scheme through a library notice in the month of August every year.

(*ii*) Interested students are oriented regarding the details of the scheme, rules and regulations and all the related aspects.

(*iii*) The students are asked to fill up forms in the first week of September.

(*iv*) Forms are processed after they are duly filled in with necessary deposite, photograph etc.

(*v*) Forms are then handed over to the librarian after due identification through, admission receipts. Cards/Library cards etc., counterfoil of the receipts are issued to the students in the second week of September.

(*vi*) Forms are sorted classwise and textbooks with the forms are kept ready for distribution in the third week of September.

(*vii*) First come first serve is strictly followed though, preference is given to the students coming from other categories as SC/ST/NT etc. (weaker sections)

(*viii*) Books are returned within three days after the final University/Board exams (March-May every year). Fines are charged as per the rules laid down.

(*ix*) Part of the deposit is returned to the students classwise between 2nd week of June - end of June every year.

(*x*) In case of default, loss etc., the deposite amount is forfeited along with necessary fine etc., (usually, replacement of copies is always encouraged) and in problem cases, the names of the

students are notified to the office to check, the issue of marksheet, TC etc. After the complete procedure clearance forms are issued from the library.

6.7 Utilisation of the Amount Generated out of Books Bank Scheme

The college has invested about Rs. 13000 towards building up the scheme and has generated Rs.18913 out of the amount retained, fines and the forfeited amount, and amount received from the weeding of books which has been utilised to purchase 'Dewey Decimal Classification schedules' from the Nagpur University Library. Two years back, a magazine rack, and about thirty two books, on different subjects which include books on competitive exams, general knowledge books etc. were purchased. Books ate usually purchased after the new session starts in July, and accounts are finalised in co-ordination with the library committee.

6.8 Futuristic Approach

The college with a concrete plan of library extension in the Xth plan of UGC looks forward, to strengthen the BBS (through UGC funds or otherwise). With the addition of technological professional (cosmetic technology course from this session, along with four more Post-graduate courses and introduction of Science faculty in offing in the near future the library committee, and the management strongly feel that, there is a definite chance to popularise this scheme and can also generage marginal profit which could be utilised towards strengthening the library services and Book Bank Scheme.

7. CONCLUSION

Academic libraries specially, a college library is the hub of all the educational activities. It has an extremely important role in shaping the future of the nation and giving a positive vision to the younger generation. Hence, any schemes and services which are developed towards improvement of library services and are directed towards its users should be given utmost preference.

'Book Bank Scheme' with its shortcoming at the operational level in several institutions may not be extremely popular today but, there is an urgent need to strengthen this system in order to achieve

self-reliance in education and helping poor students. The successful operation and functioning of the BBS is based on the premise that, it has adequate resources to purchase required books and also has fully trained and qualified staff capable of organising the BBS in the most scientific manner. If one proceeds with this optimistic view in mind, the day is not far when, these schemes would occupy an important place in the libraries, I have a strong feeling that, with proper research and evaluation of the present schemes and the necessary innovations a Quality Assurance Programme can be easily worked out. In view of the computerisation of college libraries the task of implementing the BBS would become quite speedy, easy and much more scientific, In the near future, Book Bank schemes will became an inseparable part of the college libraries and play a key role in linking up the producers and the end users of 'Knowledge'.

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Accreditation of Library Schools: Quality in Library and Information Science Education

A. P. PARADKAR AND P. M. PARADKAR

ABSTRACT

Quality assurance in the field of LIS includes building up of right quality and reliability into our services and information products and assure continuing satisfactory operation of the library system to users. The old methods of information collection, storage and retrieval are replaced by the new technology. But it we look at the courses being taught in the LIS schools, we find that we are still rooted in a major way in the past. Quality concern directs us to focus on ways of ensuring quality of education offered by the LIS schools. The paper discusses various attributes while considering quality and the need for accreditation of LIS schools.

1. INTRODUCTION

The process of globalisation and liberalisation has set in and existing educational institutions are likely to undergo radical transformations appropriate for society in the 21st Century. The institutional structures, the ways of living and working are changing under the impact of the process of globalisation. The globalisation of the economy is likely to lead to a globalisation of education. With globalisation of education, it is necessary to ensure that standard of education in different countries is by and large the same.

Modern society is influenced by rapid developments in technology. An educational system that aims to prepare learner for life in

such a society has to adopt the universal structure to include technology as a vital field of knowledge.

The expectation of library service is changing rapidly which has necessitated revising the staff skills to adapt to changing technologies.

2. QUALITY IN EDUCATION

Quality is a measure of achievement of an organisation in terms of user satisfaction. In the field of education, quality is a measure of the achievement of an institution in terms of student (customer) satisfaction. Total system of education develops as an effective and efficient system only if subsystems in the educational system work collaboratively. This will result in high quality services and product. In the formal system of education the performance set with respect to teaching, research and sucess rate in the examination decide the quality. Quality in education is a product of intensive investment of capital, talent and hard work.

In this era of information technology we have moved from old practice of memorising facts to discovering data and information, and synthesising them for problem solving. The field of education has always had to adapt to the situations that arise in the society.

In any education system after a particular period, cirriculum becomes obsolete and new horizons of modern disciplines keep emerging. Hence, it is applicable to education system that quality is not a static destination, but a continuous journey.

3. QUALITY IN LIS EDUCATION

To keep up with the pace of developments and demand for efficient professionals more responsibility is placed on Library and Information Science schools (LIS). Building the information professional of tomorrow entails updation of knowledge and skills. The reasons is, the curricular organisation of the BLIS and MLIS degrees determines the quality of services provided by the libraries and information centres.

Quality of any activity changes with the time, environment, user reaction and many other factors. In order to survive, libraries and information centers must find ways to continually stay in tune with

needs of their users and consistently meet their requirements. Increased global competition has led to increased and more stringent customer expectations with regard to quality.

However, 'specifications' incorporated in users requirements may not in themselves guarantee that a user's requirement will be met consistently, if there are deficiencies in the organisation of system.

For effective quality assurance the aspects that need to be monitered and assessed are:

- infrastructure and learning resources including student support.
- Curricula – design, content and development.
- Teaching and learning methodologies
- Evaluation mechanisms and student progress.
- Linkages with research and community.

4. LIS SCHOOLS AND TQM

TQM is a systematic way of guaranteeing that organised activities take place in the planned way. Propogation of TQM values in an organisation is a means of pushing the total organisation to higher standards of performance.

Rapidly, emerging information technology system and total quality work together to reduce defects, improve safety, improve delivery, increase reliability and increase user service and satisfaction.

It is possible to identify the notions of quality by the terms like quality assurance (managing the process) and quality enhancement (constant improvement and development) for judging quality, a measuring standard needs to be established.

These concern have led to the development of quality system standards and guidelines. For ensuring quality education an accreditation council should be formed.

General expectations from such a council are:

- It should define basic elements of the LIS school system.
- It should ensure uniformity in each and every LIS school system for universal recognition.
- It should create discipline for total quality process.
- It should be able to assess LIS schools' requirements.

- A series of minimum acceptable level of standards that a LIS school quality management practice should meet, must be set.
- It should translate quality concepts into achievable targets.
- It should provide an opportunity to create and improve system.

In general, quality is also a holistic view of an organisation by which all the activities require active consideration careful planning and implementation.

The challenge of 'Quality' in LIS education cannot be squarely met unless the present problems in the schools are identified and solved.

With a phenomenal increase in number of LIS school (quantity), quality has suffered greater dilution. Main challenges to meet the quality requirements of LIS schools are

- Building the excellent information professionals of tomorrow.
- Restructuring the syllabi as per the need of the hour.
- Training teachers for the new syllabi.
- Well-equipped new laboratory with latest PCs, multimedia and Internet facility.
- Training administrative staff for handling and maintaining these equipments.
- Fostering interest among student towards learning.
- Fund raising for all of the above.
- Inducting uniformity in admission procedures, examination pattern, taught courses, intake capacity facility in various LIS schools.

With an alarming increase in the number of library schools, the quality of training programmes has certainly got affected adversely.

For the purpose of improving the LIS school system the need to evaluate their performance has gained significance. So that from the performance evaluation results institution can discover ways of doing things more efficiently and more effectively. Accreditation is the accepted methodology for performance evaluation based on a predetermined frame of reference.

5. ACCREDITATION AND EDUCATION

Today, accreditation and assessment have become the order of the day the world over, and many countries have already established their

own national councils, for ensuring the quality of their higher education.

The existing procedure for accreditation in the member countries of The International Network of Quality Assurance Agencies in Higher Education (INQAAHE) is based on two things – self study report on the institution and peer judgement on the predetermined criteria or standards that acts as an indication of quality.

The National Assessment & Accreditation Council (NAAC) was established in 1994 to promote quality relevance through organisational efficiency in India. It is an external quality assurance agency like the Higher Education Quality Control Council of UK and is a member of INQAAHE. UGC has established NAAC as an autonomous body to assess and accredit excellence in education. The prime responsibility with NAAC is:

(*a*) to devise and establish mechanisms for periodic assessment and accreditation of institutions of higher education or units thereof,

(*b*) to encourage and help institutions to develop procedure and techniques for self-evaluation to overcome both complacency and diffidence,

(*c*) to create an information database in higher education; and

(*d*) to establish a functional relationship with the UGC on the matters related to the assessment and accreditation of different institutions to students teachers, employers, fund agencies and the public.

NAAC's process of assessment and accreditation has three stages.

- Submission of a self-study report by the institution on the guidelines given by NAAC.
- Validation of the same by the visit of a peer team to the institution.
- Final decision by NAAC based on the evidences and recommendations of the peer team.

UGC has already started its efforts to evolve performance indicators for the purposes of funding and the Ninth Plan document clearly states that, one third of the funding to universities will be based on the performance evaluation.

6. ACCREDITATION OF LIS SCHOOLS

Accreditation envisages schemes of self-study by those integrally connected with the institution—the faculty, the alumni, and administration. The overall focus of accreditation is on the quality of teaching, learning, evaluation and other activities leading to the attainment of goals. For this purpose of accreditation various performance indicators can be taken into consideration.

The Jarratt Report (1985) of UK proposed three kinds of performance indicators which can be applied to LIS school as follows.

- Internal performance indicators
- External performance indicators
- Operational performance indicators

Internal Performance Indicators include

- Market share of applications
- Attraction of Master's and Doctoral students
- Success rate (and time taken)
- Teaching quality

External Performance Indicators include

- Acceptability of students in employment
- First destination of students
- Reputation judged by external reviews
- Publications by staff and citations
- Patents, inventions
- Membership, prizes, medals of learned societies
- Papers at conferences

Operational Performance Indicators include

- Unit costs
- Staff / student ratio
- Staff work loads
- Class sizes
- Library stock availability
- Computing availability

let us consider LIS education as a system.

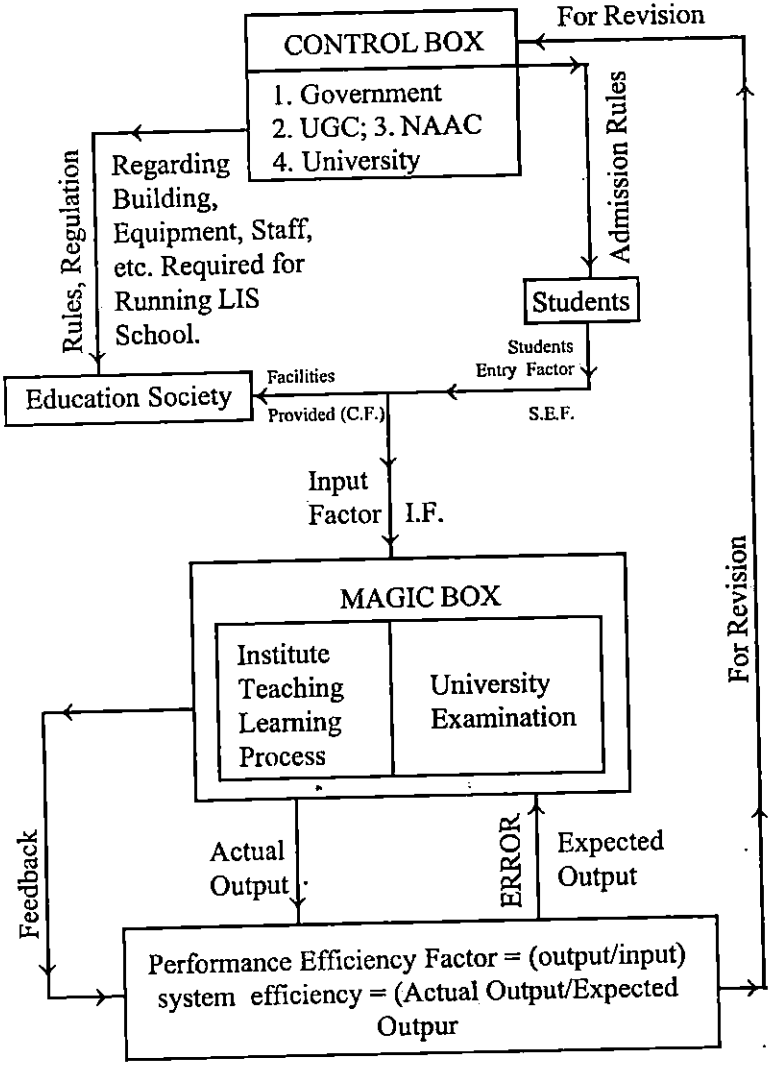


Fig. 1: LIS Education Represented as System

For attaining quality in LIS education system above, performance indicators, can also be constituted as follows.

(a) Educational Inputs

Educational inputs include the infrastructure or physical resources, as well as availability and utilisation of these inputs, *secondly* teaching and administrative staff-students coverage, or manpower resources and *thirdly* financial resources which cover budgetary instruments, index of mobilisation of resources, built-in flexibility etc.

(b) Educational Processes

Teaching learning strategies and methodologies adopted.

(c) Educational Outputs

Success rate of students knowledge and skills acquired, and performance of students of students and teachers in their future career.

These indicators can be interlinked as follows:

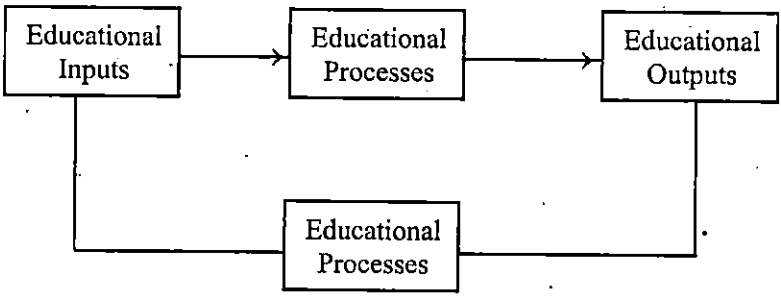


Fig. 2.

The above indicators are useful for improvement in LIS schools. These are inter-related and interdependent.

Following are the suggestions for attaining challenge of quality in LIS schools.

- Quality should be reflected through the publications of high order by teaching staff.
- The administrators not teaching staff must make a commitment that they want to embark upon the project of total quality.

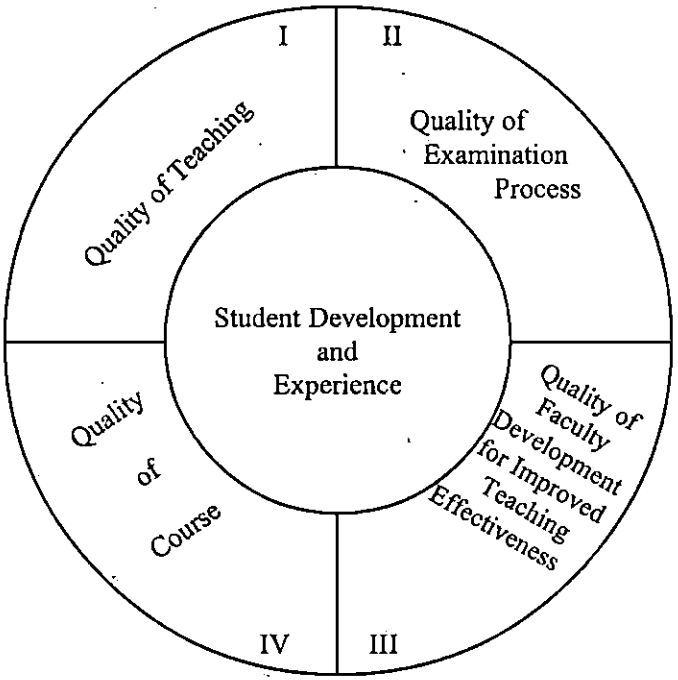


Fig. 3: Quality of Core Activities that affect LIS education.

- Successful teaching and research innovation should be monitored and recorded.
- Teachers as well as non-teaching staff should be given proper in-service training to match with latest requirements, thereby enhancing the quality and reputation of the LIS school.
- Syllabi should be revamped, keeping in tune with modern requirements and should be flexible enough to incorporate changes
- Physical infrastructure should complement the syllabi
- Excellent syllabi could not produce good results, if not delivered well. Therefore, the teaching method shall have to be innovative and systematic.
- Teachers should participate in student development programme.
- Society, Government and students should share the rising cost of quality education

- Encourage students to the motivated through self-study.
- The students feedback on various activities including faculty performance should be considered.
- Assignments, dissertations, project work, planning, reasoning, problem solving, comprehension and host of similar attributes should be sufficiently sharpened so as to infuse a sense of confidence in our students.
- LIS schools should also be a place for outstanding scholars coming from other places, so at to provide proper exposure to the international milieu.
- There should be uniformity in the standards of courses taught, examination and research in all LIS schools.
- Accreditation should be mandatory.
- To maintain standards in LIS schools professional organisations like ILA, IATLIS and IASLIC on national level and government body like UGC which can act as a body for accreditation should be established.

7. CONCLUSION

Total quality in LIS education is the need of the hour. Assessment and accreditation results may be used by the students, teachers and Governement to make decisions on choice of the institution for various purposes. In the 21st Century accreditation grade point of LIS schools should be the hallmarks of quality and excellence. Quality is a process. It is not directly tangible but its power can be felt, sensed and observed. Quality assurance can lead to TQM in any LIS school which has "Quality conscious mind and continuous guiding management", as a way of life, only can produce "quality information manager" for this continuous appraisal of schools is needed.

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Application of Information Technology in Sardar Vallabhbhai Regional College of Engineering and Technology Library, Surat

T.B. GHOSH

ABSTRACT

The paper describes the electronic library services of the College. These include home page at http://www.svrec.ernet.in and directly at http://202.141.85.210/ in addition to library computerisation, an electronic library with 350 CD-ROM, 19 CD-ROM databases and 1500 video cassettes; e-mail/Internet services, and a virtual library which is available both at the college home page *i.e.* http://www.svrec.ernet.in or http://202.141.85.210/ and at http://www.geocities.com/ghosh_tbd. IT has proved to be an effective instrument in raising the quality of library services.

1. INTRODUCTION

The library is the heart and main information resource centre of any institution. It is the part and parcel of education and teaching system. The modern age of information explosion poses stiff challanges in providing right information to right user in right time. In such a situation Information Technology (IT) comes to rescue of libraries and information centres. Today's changing scenario in the publishing and IT fields has forced the library and information professional to accept the changing demands placed on the profession today. There is a marked shift from the need of information in academic quality for industry and business houses today. The constant changes in the technology have direct impact on the functioning of library and information services. The information service has crossed national boundaries and with the rapid progress in telecommunication technology, the

demand for information and its methods of supply have undergone a sea change with advent of e-mail services and the Internet.

2. DEFINITION

Information technology is a generic term used for all activities connected with computer based processing, storage and transfer of information. It involves computers, electronic media, satellite, and telecommunication and mass storage devices.

According to ALA glossary "Information technology is the application of computer and other technology to the acquisition, organization, storage, retrieval and dissemination of information."

Information technology does not confine only to hardware and software but it also covers the techniques and methods used for collection, storage, processing and dissemination of information.

The information technology can be grouped in following areas: (*i*) Computer technology (*ii*) Communication technology (*iii*) Reprographic technology (*iv*) Storage (*v*) Databases (*vi*) Information systems (*vii*) Expert systems (*viii*) Videotext and Teletext.

3. NEED FOR INFORMATION TECHNOLOGY

The new technology has made a deep impact on the libraries. Nowadays the emphasis in libraries is shifting from collection to access. Providing speedy and accurate access to information is the pivotal point of activity. To cope up with the time electronic resources are beneficial because the information changes every minute. Due to jet speed of information emergence, to manual scanning of books and feeding the information is neither practical nor possible. In addition to this, electronic information resources are growing enormously, access to which is not possible without application of information technology. The access to electronic information resources and resource sharing with near about 140 countries of the world has been rendered easy with the application of new technology.

4. COMPONENTS OF EMERGING INFORMATION ENVIRONMENT

Components of emerging information environment may be grouped into following areas.

- Electronic publishing
- CD-ROM
- Multimedia
- On-line information system
- E-mail
- Internet
- Virtual library.

5. APPLICATION OF IT IN S. V. R. C. E. T. LIBRARY

Sardar Vallabhbhai Regional College of Engineering and Technology, Surat was established in 1961 with three branches of engineering i.e. Civil, Mechanical, and Electrical. At present it has seven branches *i.e.* (*i*) Civil (*ii*) Mechanical (*iii*) Electrical (*iv*) Electronics (*v*) Computer (*vi*) Production and (*vii*) Chemical Engineering with 112 faculty members, 145 technical, administrative and supporting staff. All major departments have facilities for postgraduate studies and Ph.D. The college is also conducting PDDC (Post Diploma Degree Course). Most of the faculty members have published several papers in reputed journals and they have presented papers in various national and international conferences.

In addition to teaching, the college has been providing consultancy services and conducting research projects from time to time. The college is also having a Science and Technology Entrepreneurship Development cell for assisting new entrepreneur in starting new industries and existing entrepreneur in developing their products.

The central library of S.V.R.C.E.T. is satisfying the information needs of its users. Total number of collection of the library is 75,000 including back volumes, standards, technical reports. In this era of information explosion it is not possible to satisfy the specific information needs of the users with the traditional library system and use of information technology was considered necessary.

Information technology has been introduced in SVRCET Library in the following major areas:

- Library automation
- Electronic library
- E-mail and internet
- Virtual library

5.1 Library Automation

The first attempt to computerise the library was made in 1995-96 with modest set of machines including two personal computers one dot matrix printer and CDS/ISIS software. 3000 entries were made with the limited staff. In 1997 LIBSYS software was installed in HP Net server in SCO UNIX platform with five users license and four diskless terminals were installed. LAN and TCP/IP connection on fiber optic cable were extended to the library from the computer center. But the problem was mainly in data entry of huge collection with limited staff. Enquiries were made with other reputed big libraries which had completed automation work and it was learnt that some libraries had engaged extra manpower and other libraries had entrusted the data entry work to other professional organisations on contract basis. But in case of SVRCET library no extra manpower was available. After considering all aspects the Librarian decided to start the data entry work and circulation work simultaneously taking risk in three different steps and automated library system was started form the date of installation of software.

5.1.1 Step 1: Entry of frequently used books

Initially books were used for entering author, title, call number and accession number. After getting back the book the entry of the rest of the data elements is sent to the stack putting "ENTRY COMPLETED" stamp on the date slip. After running this system for two semesters (*i.e.* one year) it was found that all the frequently used books have been entered in the database.

5.1.2 Step 2: Entry of often used and rarely used books

After running the above mentioned system for two semesters one of the staff members who was responsible for manual cataloguing work was engaged to check the stack physically and pick up remaining books for data entry and most of the work was completed by December, 1999.

5.1.3 Step 3: Entry of back volumes

As the back volumes are bulky and heavy it was not possible to bring those volumes to the computer terminal. In January 2000 two staff members were engaged one for preparing worksheet and one for data

entry. The entry of 6,627 of back volumes of journals was completed in June 2000 and full-fledged automated library system was introduced forthwith.

6. UPDATATION OF SOFTWARE INTO INTERNET EMBEDDED VERSION

In 1999 the LIBSYS software has updated to client/sever Internet embedded version. In this version one can add a multiple number of PCs with at least Windows 95 operating system as clients to the main server instead of 5 users license of SCO UNIX. As a result the library is connected with the Internet through a proxy server, which is installed in the library premises. The library can be accessed both from the college home page at http://www.svrec.ernet.in and directly at http:// 202.141.85.210/

7. ELECTRONIC LIBRARY

In addition to computerisation of library function *i.e.* OPAC (Online Public Access Catalogue) acquisition, circulation, serial control etc. a small electronic library has also been started. The electronic library consists of 350 CDs with following 19 CD-ROM databases and 1500 video cassettes. Out of different CD Rom databases following are most important.

Table :1 List of CD-ROM Databases

Sl. No.	*CD-ROM Database/ Publication*	*Coverage*	*Type*
1.	IEL (IEE/IEEE Electronic Library- All IEE, IEEE Journals, Conference Proceedings & Standards	1988 to Jun'98	Full Text
2.	ASTM Standards	Complete Set	Full Text
3.	Indian Standards	Complete set	Full Text
4.	SAE Technical Papers	1994 to 1997	1996 Full Text 1994, 95 & 97 Abstract

Contd.

Contd.

Sl. No.	*CD-ROM Database/ Publication*	*Coverage*	*Type*
5.	Ei Compendex	1992–1999	Abstract
6.	Ei Chem Disc	1988–Present	Abstract
7.	ISMECH (Mechanical Engg. Abstract)	1973–1999	Abstract
8.	ICONDA (International Construction Database)	1976–1999	Abstract
9.	Active Library of Corrosion		Full Text
10.	International Civil Engineering Abstract	1972–1999	Abstract
11.	Chemical Engineering and Biotechnology Abstract	1971–1999	Abstract
12.	Peterson Gradeline (Contains information on higher education all over the world)	1998–1999	Full Text
13.	MTech On CD (A Database on Manufacturing Technology and Machine Tools) CMTI, Bangalore	1977–1996	Abstract
14.	Petroleum Abstract	1988–1998	Abstract
15.	Digicat on CD (Information of Different manufacturers of various product and Building materials)	Current	Full Text
16.	College CD (Information on Foreign and Indian Educational Instt.)	Current	Full Text
17.	ECOR (Engineering Corrosion)	Current	Full Text
18.	Event line on CD-ROM (information on Conference/Workshop)	Current	Full Text
19.	Telemetric for Libraries (Reports on development of Libraries by European Commission)	up to 1998	Full Text

In addition to the above other publications like Encyclopedia/Handbook etc. in CD format are also available in the Library

1. Encyclopedia of Mathematics on CD-ROM	1997	Full Text
2. Multimedia Encyclopedia of Science & Technology	1998 edition	Full text

The library is providing electronic information service *i.e.* CD-Rom database searching and printing to the students and faculty and outsiders against a nominal charge.

8. E-MAIL AND INTERNET

All the terminals in the library are connected with the V-SAT of the college. A separate mail server for the library has been installed. E-mail is being used since 1996 for correspondence with other institutions, publishers inside and outside the country. Nowadays 70 per cent correspondences are diverted to E-mail from traditional typing and postal procedure.

Most interesting feature of E-mail is that the library is subscribing contents service of 50 journals from different electronic publishers like Elsevier, Springer, and ISI etc. The contents of the journals are being received through E-mail before these are published. The library is registered as a free subscriber to different networks like Biomednet, MCB University Press Library link etc. As a result news regarding new publications, conferences and new development on the concerned field are available every week through E-mail.

8.1 Internet

The use of Internet in the library is limited within the library work *i.e.* to access the catalogue of other libraries, inside and outside the country; to access the publishers' catalogue; to access online reference source like British Library online reference service; Canada on-line, Internet Public Library (IPL) etc. In addition to these Internet is used to access the digital library of other universities/institutions and to create a virtual library for others.

9. VIRTUAL LIBRARY

Virtual library is a library that does not exist physically. It is used to denote a library with distributed collections or services that act as one.

It is a website with pointers and links to other sites. Recently the librarian has undertaken to create virtual library which will be beneficial to academicians, researchers and professionals of different fields.

The virtual library is available at http://www.geocities.com/ghosh_tbd. From this site any user can access to libraries and virtual libraries around the world and access to a large number of journals/ periodicals in full text, abstracts and contents and a lot of online information sources and services.

10. HARDWARE AND SOFTWARES USED IN SVRCET LIBRARY

10.1 Computer

1. HP net Server 1GB. HD	1
2. Zenith Net Server 9GB HD, 128 MB RAM	1
3. HCL Infinity 2000 1GB.HD, 32 MB RAM	1
4. HCL Infinity 2000 2GB HD 64 MB RAM	1
5. Zenith Celeron 4GB HD 64 MB RAM	2
6. HP Vectra 460MB HD 8 MB RAM	2
7. HCL Infinity 2000 Diskless PC	4
8. CD Net server with 7 Dives 8X	1

10.2 Printer

1. Dot Matrix Printer 132 Column	2
2. Dot Matrix Printer 80 Column	2
3. HP laser Printer 6P	1
4. HP Deskjet colour Printer	2

10.3 Library Automation Software

1. CDS/ISIS
2. LIBSYS

11. CONCLUSION

Information Technology is a wonderful gift provided by the present day technological advancements and innovations. In order to meet the growing needs of information we must make use of the best possible services in our profession which can benefit a lot of its users. Information technology provides the advantage of, benefiting

academicians, ordinary information seekers or miscellaneous groups by making the right information available at the right time. IT changed the total information scenario and it has become the need of the day and demands its worldwide acceptance for meeting the enormous growing information needs.

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Collection Development in University Libraries

B.U. KANNAPPANAVAR AND M. VIJAY KUMAR

ABSTRACT

The paper focuses on the issue of collection development with special reference to electronic resources. The impact of information technology on collection development alongwith its various facets are also highlighted in the paper.

1. INTRODUCTION

The fifth law of library science, 'Library is a Growing Organism' implies that as time passes the users, the numbers of documents in the library, the library staff and the service to the users will increase. It also implies that the above organs of library service will develop according to the changing environment by modifications and replacements. The role and importance of libraries in education has been very well emphasised by all the educational commissions appointed by the Government of India from time to time. The library in a university environment should help to fulfil the educational and research goals. The university library needs to provide resources, which are necessary for study and research of the users.

Naturally, university libraries in India add on an average eight to ten thousand volumes per year to their existing collections. Thus, the university libraries which are twenty years or more old have reached a stage of pause for a while and think about their growing collections and the problems associated with it, such as difficulties in retrieval of

documents, storage or shelving space, need for extension of the existing library buildings and backlog in binding. It is found that the solution to continuous additions to the library collection and shortage of shelving spaces lies not merely in the provision of additional space but in pursuing the collection by separating obsolete, low used and untouched books. If these types of books are allowed to continue along with the other collections they will impede the use of the library's active collection. Disposing or otherwise organising such books forms an important aspect of collection management.

A university library combines in itself the functions of a research library, academic library and public library at large. It is a public library in the sense that it has literature on all branches of knowledge since they are taught in the university and thus the users are general readers. It is an academic library since it has in its collection books and journals that support curriculum course work and learning. It is a research library in the sense that it has collection supporting the research work undertaken by the research students and faculty.

Thus the university library collection should cover research, curriculum and creative needs of its users. It will have different levels of works needs. It is the responsibility of the library to acquire and organise the literature on all these aspects of knowledge.

The objective of collection development is to build a library collection, which will supply a continuously expanding store of useful information to support and enrich the educational programmes of the university. In order to provide the best materials for faithful discharge of its duties the library requires guidelines for collection development.

2. COLLECTION DEVELOPMENT

Collection development covers a broad range of activities related to the policies and procedures of selection, assessing user needs, evaluation of present collection, weeding out and storing parts of collection and planning for resource sharing. Collection development is not only an individual or group's activity; it is a planning and decision-making process. Collection development is a plan, which can be implemented and evaluated. It is a process of inter-twining of information resources, information use and user demands and fiscal resources. The process involves mainly three aspects.

(*i*) Collection planning
(*ii*) Collection implementation and
(*iii*) Collection evaluation.

3. POLICY FOR COLLECTION DEVELOPMENT

Collection development in university libraries should be based on proper planning. Library should have a policy in this regard. The disciplines in which courses are conducted can be easily identified. Total funds available should be apportioned among various departments of study and research or among various disciplines in which courses are conducted. This must be done judiciously on the basis of need. Similar decision should be taken relating to the peripheral subjects.

(*i*) When new disciplines evolve, special funds should be made available for developing a basic collection in that discipline.
(*ii*) Books relating to the academic disciplines should be based on the recommendations of subject committees or departmental councils constituting the teachers of the respective academic departments.
(*iii*) Separate funds should be apportioned for books of general nature. Books, which may be of interest to the teachers in general, may be purchased from this fund.
(*iv*) The university librarian or a senior most person in library staff who has good academic background and general knowledge should do selection for books of this nature.
(*v*) It should be ascertained that books ordered have a certain academic standard.

4. IMPACT OF IT ON COLLECTION DEVELOPMENT

In recent years information technologies have advanced to such an extent that their impact on libraries is significant. Particularly, developments regarding digital libraries, Internet, electronic publication, CD-ROMs etc., have forced the librarians to change the way they are now functioning. In this context and also due to the budgetary constraints librarians are giving importance to accessing the other library collection rather than possessing almost all documents on a given subject. For instance, a number of full text database is available on

Internet. Why then one has to acquire/purchase similar documents? Why can't one access such records and download if necessary? Once downloaded, such electronic documents must be classified and catalogued, so that one need not search and download the same documents again, if and when required. In some cases however, it may be economic to download again.

5. IMPACT OF CD-ROM

CD-ROM is now increasingly being accepted as a standard storage medium based on ISO standards. One CD can store about 650 MB of data. It is estimated that the lifetime of a CD-ROM is almost 100 years yet to be proved in a real life situation. There are cases where scratched/damaged CD-ROMs cannot be read by the system and it is practically impossible to acquire them again. More than anything else, it is inexpensive. A large number of CD-ROM databases are available on almost all subjects. Multimedia databases are now increasingly becoming popular. They are the most useful educational tools, especially for the beginners in any subject. No librarian can afford to ignore this development. In the near future, perhaps there is no need for subscribing secondary periodicals in print media. If CD-ROM database is subscribed and made available on CD-NET, many can even access them on networks from remote distances.

Often, cost is considered as a major factor to decide whether or not one should subscribe to CD-ROM database. It is no longer true. Cost is becoming less and less every year. The problems perhaps is of compatibility—hardware and software with its different versions, change so frequently that one need to worry about its compatibility with new systems. This, however, has to be tackled by adopting certain international standards. Evaluating CD-ROM databases is yet another task, the simple way is to know:

- How good is its retrieval engine?
- Its coverage country-wise, language-wise etc. Does it cover Indian literature?
- How frequently it is updated?
- Whether it can be replaced, if and when it is damaged or misplaced?

6. IMPACT OF INTERNET

Yet another development in IT applications is the emergence of Internet. Its impact on libraries is considerable. Internet is popularly known as the Network of networks. It is being used worldwide for personal and group communication, file transfer and for accessing databases on remote computers.

Information sources on Internet are all stored as computer files of some kind or the other. They have a location on atleast one Internet site; may be duplicated at other side. These files on the Internet contain varied materials. Sources like electronic journals, pre-prints, technical reports, numerical and graphic data, software, databases library catalogues, educational materials, company profiles, patents, standards, information on societies, institutions, associations etc., are available on Internet. Much of these are 'reference type' in nature. Other resources on Internet can be classified as usenet resources, gopher resources, www resources, WALS resources etc.

In this context libraries may have to review their collection development policy—much of what it available on Internet need be procured. This, however, involves a considerable amount of time and cost to conduct a survey of what is available and how long it is available? How much it costs to access for searching and downloading? This is a difficult task.

7. IMPACT OF DIGITAL LIBRARIES

The term digital libraries refers to a new way of carrying out the functions of libraries encompassing new type of electronic information resources, new approaches to acquisition; new methods of storage and preservation, new approaches to classification and cataloguing, especially of electronic data; intensive use of electronic system and networks and dramatic shifts in intellectual, organisational and electronic practices. It is also known as a distributed text-based computerised information system and services. It may have several provisions to access documents, those are of high value, mostly from outside the organisation. In digital environment, only digital information is disseminated; software is produced locally, and most of the information is obtained by remote accesses; much of this information is less permanent in nature. In these circumstances it is very difficult for librarians to decide:

- What should be acquired, stored and organised
- Who should do it (because most of such information is accessed directly by users, without the knowledge of the librarians)?
- What standards are to be followed?
- User locates and accesses the information; information is not usually structured; no rules or codes are followed and no one controls the information that is made available.

The data or information may be of different types. To organise the data we require cataloguing practice and it calls for an appropriate data model for organising data with standard format. Specialised technologies are needed for compressing as well as for organising information. These are the major challenges in digital library environment.

8. CONCLUSION

To conclude, it become clear that for libraries and information centers, IT is a crucial consideration as it has an impact not only on the organisational structure, but also on the library purpose and service. Hence, libraries and librarians have little choice but to adapt and adopt IT for library operations, especially for collection development activities and information services generation. It is necessary that information professionals examine and design appropriate strategies in the selection and use of emerging technologies so as to increase productivity in library operations like collection development and also enhancement of services to the users.

In the context of collection development it should be remembered that the key issues to be considered would relate; to ownership *Vs* access, co-operative efforts, and evaluation.

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Excellence in Library and Information Services Through Total Quality Management in Academic Libraries

AMRUTH SHERIKAR AND S.L. SANGAM

ABSTRACT

This paper summarises the classical as well as modern tools that are available for quality management. How the excellence can be achieved in library and information services (LIS) of the academic libraries by way of Total Quality Management and what initiatives are needed to be taken by the future academic libraries in pursuit of customer delight are explained. Concludes with an emphasis on Total Quality Management as ultimate solution to enhance library services of future academic libraries.

1. TQM APPROACH IN LIBRARY AND INFORMATION SERVICES

Information is an intellectual and a key resource for economic, socio-cultural and political development of society at large affecting all walks of life. Knowingly or unknowingly, intentionally or unintentionally, all of us irrespective of discipline, caste or creed make use of information to ensure a standard of living. Library and information centres take the pride in preserving and disseminating this valuable information resource by collecting, organising, maintaining and disseminating information to the user community at large.

There are several forces of change *viz.*:

- globalisation of information;
- rapid development of innovations in computing;
- increased competition for funding;

- population changes;
- shifts in ethnic and racial composition; and
- increasing alternatives of library services are severelly affecting the libraries and their systems.

Due to the increase in research and development activities, avalanche of information is being produced in different formats. Concommitant to this, we are witnessing greater diversity of patrons' interests. Increased intensity of their demand is growing. At the same time to cope up with the information overload, computers and communication technologies have emerged. Their impact on library and information activities and services is proformed. In this scenario, the libraries are in the state of metamorphosis and these should be flexible and adaptable to the changing demands of users for providing better improved services to the users.

But practically, the libraries spend enormous amount for developing collection of library in order to provide effective and efficient information services to the users which are still under utilised. The serious question arises in our mind regarding the possible reasons for such under utilisation—as to whether the fault lies with library system or with user community. This has resulted in serious challenge for the survival and integrity of libraries in this world of stiff competition where complex user needs demand more of quality based services. Unless and until the library products and services are quality oriented which satisfy the customer requirements, the commercial and private sectors will end up leaving libraries nowhere in the information sector. As a result of this, the concept of TQM has become relevant in the present state of library affairs in order to ensure quality services. The most centred approach of TQM philosophy is to satisfy the 'customer . . . customer . . . infinity' that too on a continual basis.

The concept of TQM in library and information centres seems to be of recent origin but when we trace the history in the Indian context- Dr S.R. Ranganathan's five laws of library science have concentrated on 'Customer/ Patron' which have direct analogy to TQM theory. This clearly shows the relevance of TQMa approach even in 1930's.

In view of the changing scenario, library and information professionals will have to develop strategies that will gauge the requirements of users more accurately and precisely proving information at a right time and right place.

2. CONCEPT OF TQM

TQM is defined as managing the entire organisation so that it excels in all dimensions of products and services which are important to the customers.[1] TQM consists of three facets:

One Objective:	Continuous improvement.
Three Principles:	Customer focus, process improvement and total involvement
Six Supporting Elements:	Leadership, education and training, supportive structure, communications, reward and recognition and measurement.[2]

According to BSI/ISO standards TQM is defined as 'a management philosophy enabling all activities through which the needs of customers and the community and the objectives of organisations are satisfied in the most efficient and cost effective way by maximising the potential of all employees in a continuing drive for improvement'.[3] Therefore, TQM is a participative management style which focuses on satisfying customer expectations by continuously improving the way business is conducted. To justify the existence and visibility as noble profession for survival, academic libraries necessarily adopt TQM culture by paradigm shifts from:

- decentralistion to a shared vision of unity amidst diversity;
- specialisation and segmentation of task to an integrated view of tasks;
- individual accomplishments to a recognition of efficacy and collaboration;
- reactive to dynamic environment characterised by innovation and risk taking;
- a rigid process culture to one with flexible responses to different situations;
- a hierarchically governed organisation towards one with trust in and participation of, staff at all levels.

3. TOOLS FOR QUALITY MANAGEMENT

Measurement of any act is basic for everything because we cannot manage the things what we cannot measure, further we cannot

measure what we cannot operationally define, we cannot operationally define what we do not understand and lastly we will not succeed if we do not manage.

Therefore quality management tools are also very essential and should be used for problem solving and continuous improvement. Although these tools do not substitute for judgement and process knowledge but they help in complex situations and turn raw data into information that can aid in decision-making. The tools used in TQM can be categorised as classical and modern as shown below.

Classical Tools	*Modern Tools*
Flow Charts	Affinity diagram
Pareto sheets	Interrelationship diagram
Histograms	Tree diagram
Check sheets	Matrix diagram
Cause and effect	Arrow diagram etc. diagram etc.

For the purpose of our convenience, a classical and modern tool used for quality management is summarised below.

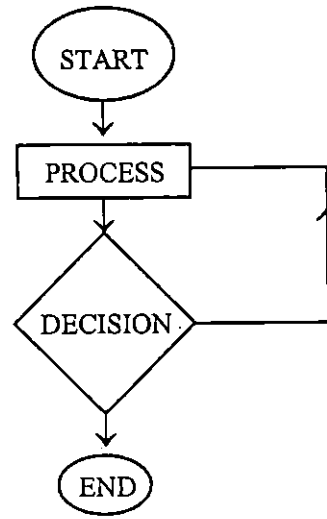
3.1 Flow Charts

It is the most common classical method for quality management in LIS. It is a picture that shows the flow of activity of a process. In other words. Flow chart describes the main steps, steps, and eventual outputs of a process and is a continuous improvement planning tool. Flow chart comprises of—

- graphically depicts all the steps of a process;
- documents how a process works;
- relates various stages of work process and
- provides an organised means to study the process.

3.2 Affinity Diagram

This shows the resemblance or relationship of process of a activity that remain unresolved. For instance, when a particular work is assigned, if the work assigned remains unresolved for not doing the assigned work, then the affinity diagram is worked out as a tool for solving the issue, *i.e.*



– That is not my job
– Lack of initiative
– No one wants to take responsibility
– Multiple ownership

4. EXCELLENCE IN LIS THROUGH TQM

There is a general agreement as to the concepts and philosophy of TQM but there is less agreement about the exact measures to be undertaken in achieving excellence in LIS through TQM.

Although much has been written on subject of implementation of TQM but there are many factors that may influence in a specific context. It is more fruitful to explore measures on the road to be successful implementation of TQM in achieving quality based services in library and information centres.

4.1 Strategic Plan

'Think before you leap' – a philosophy behind which all the activities of library work out effectively and efficiently. Planning is the first and foremost step in the library setup that clearly defines as to how a particular activity be carried out with care and diligence taking into consideration pros and cons of result. Improper planning leads to

failure and as such strategic planning is a basic principle of management to be adopted in library system for providing quality based services to the users.

4.2 Goals and Objectives

In an academic library setup, the goals and objectives of a library should be clearly defined and understood thoroughly by the library staff. It does not mean that the present libraries in India do not have objectives of their own, but the general objectives of library of casual nature will not work towards TQM. The library should define specific objectives to justify their existence along with necessary actions and services to be undertaken to achieve the objectives. This clear vision of mind may enable libraries to achieve TQM in all activities.

4.3 Positive Thinking and Strong Vision

A library without a long term purpose is sick and as such in this competitive world both management and employees feel insecure. Majority of libraries in India have passive tendency towards their work or activities. Even the most important things are not visible, for instance the multiple effects of a happy customer. Measuring only what is visible does not contribute towards development of quality based library but needs a strong vision with positive attitude for development of libraries. The library director should initiate and be responsible for developing overall quality, policy for communicating the policies continuously throughout the organisation. Thus, strong vision, total commitment, dedication and positive thinking will lead towards TQM in libraries.

4.4 Quality is Customer Defined

Quality is defined in terms of customer's perceptions or it is more complex model that refers to the gap between customer satisfaction and demands, and an evaluatory measure to be undertaken at regular intervals so as to identify the strength and weakness of the system with a view to improve further and overcome problems for the continual development in the long run. Library is not an exception to it. It becomes obligation on the part of library/Information professionals tó evaluate their activities and services at regular intervals with respect to performance of staff, collection development and effectiveness of information services with a view to improve further. It is

observed that majority of libraries hardly evaluate their products/services, may be they are afraid of results. Even the evaluation studies are conducted by research scholars in partial fulfilment of research work which is far from implementation. This attitude will certainly restrict libraries from assuring quality based services.

The library staff should be able to adapt to the changes as and when warranted for the improvement of services especially in this technological era. The entire gamut of quality assurance rests on human resource, their attitude and willingness to provide effective and efficient services.

4.6 Role of Customers

The success of any library system depends upon the satisfaction level of customers with library activities and services and this is what is proclaimed in TQM philosophy also. In view of this the role of customers cannot be neglected in this process of TQM in libraries. Majority of users normally view the library critically which is, of course, is a healthy trend but at the same time they should come up with solutions and help libraries to solve the problems they are facing. With the moral support of users the libraries will certainly be more enthusiastic in improving services.

4.7 Written Quality Model

Each and every library activity and service including the duties and responsibilities should be clearly spelled out in writing in the quality manual document to achieve uniformity and consistency in achieving TQM in libraries. This will act as a guide and caution for carrying out library activities effectively and efficiently.

5. TRENDS IN TQM

Quality in what today's society is forced to build for survival has led to an increase in literature on quality management over the decade or so. The major concepts of quality management mainly used in the literature, especially in LIS, are quality control, quality assurance and TQM. The Library and Information Science Abstracts (LISA) has been searched using various search strategies to identify the literature pertaining to the concepts of quality management which is shown below:

Table 1 : LISA Database (1969–2000)

Year	1992	1994	1996	1998	2000
Quality Control	31	64	51	40	26
Quality Assurance	10	28	35	24	09
TQM	11	56	29	21	12

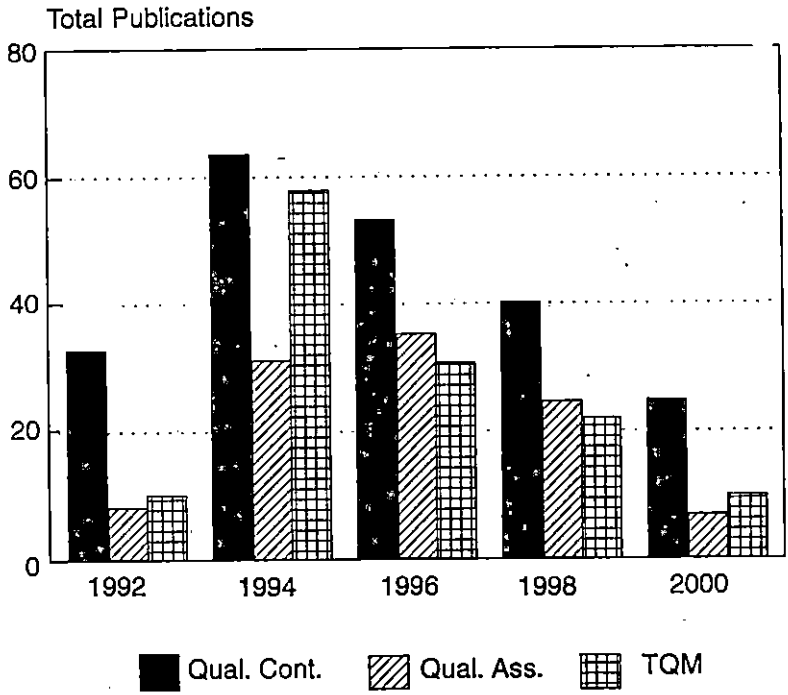
6. CONCLUSION

We must realise that the quality based services of a library measuring upto the expectation and satisfaction level of clientele is the only option left for the survival of libraries before somebody—a non-library professional colonises our patch. The library professionals are needed to join the customer service revolution and serve as indispensable interface for customers. Further, they must also anticipate the new markets. The quality can be achieved only with commitment, urge, dedication of library professionals with the support of management and that of user community. Ultimately TQM does not promise a major turnaround in the organisation, but its hallmark is its emphasis on the process, and on personnel to attain customer satisfaction.

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LISA DATABASE



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Integrating Quality in Collection Development: A Programme of Action for College Libraries in Karnataka State

B.S. MAHESWARAPPA AND P.G. TADASAD

ABSTRACT

This paper reports the results of a baseline study on collection development, organisation and management off college libraries in Karnataka State. Based on the findings of the study, it suggests a programme of action consisting of identification and mapping of information needs, development of collection policy including resource sharing programmes, selection, acquisition, management aspects such as conservation, preservation, evaluation, weeding, storage, etc., including the knowledge, skills and attitudes required by LIS personnel and the role of information technology specifically Internet for integrating quality in collection development among college libraries in Karnataka State.

1. INTRODUCTION

Library as the heart of a college should help to accomplish the academic goals of its institution. To achieve these, the college libraries require developing and organising the collection—print, non-print and electronic including networked information resources—germane to the programmes of the institution. The development of collection that is quantitatively adequate and qualitatively relevant to meet the main mission of the college is a challenging one and requires an integrated approach to its development.

In this paper, we report a brief summary of results of a baseline study on collection development, organisation and management based on data collected from five hundred and seventy one of nine hundred and thirty one college libraries in Karnataka State. Based on the

findings of the study, we suggest a programme of action for integrating quality in collection development.

2. COLLECTION DEVELOPMENT, ORGANISATION AND MANAGEMENT

2.1 Community Analysis and User Studies

Community analysis and User Studies are not undertaken in majority of college libraries (N=531:93%). Such studies are undertaken only in forty libraries. Out of which, only thirtytwo libraries are undertaking this activity regularly. Of course, all the libraries that are undertaking user studies are using the results for formulating collection development policies (CDP).

2.2 Collection Development Policy

Majority of college libraries (N=465; 81.40%) in Karnataka State do not have collection development policies. Out of one hundred and six libraries that have collection development policies, thirtyfive have it in written and seventyone in unwritten form. Of the libraries that have CDP in written form, sixteen have in outline form, twelve in summary form, and seven in full-fledged form.

2.3 Resource Sharing

Majority of college libraries are not sharing their resources with other libraries (N=505; 88.4%). Only sixty-six libraries (11.5%) have programmes for resource sharing.

2.4 Selection

Text books are selected in all libraries; general books in four hundred and thirty six; reference books in five hundred and eight, and periodicals only in three hundred ninety college libraries. Non-book materials are not selected in two hundred fifty seven (45.01%) college libraries. Documents in English language are selected in a vast majority of libraries (N=566; 99.10%) followed by documents in Kannada (N=470; 82.30%) and Hindi (N=303; 53.10%). Identification of documents is done by consulting selection tools in four hundred thirty two (75.70%); followed by books based on approval (N=376; 65.80%); suggestions (N=338; 59.20%); visiting book exhibitions (N=204; 35.70%), and other libraries (N=123; 21.30%), and based on book

jackets (N=127; 22.20%). Three fourth of four hundred and thirty two college libraries using selection tools for identification, are acquiring selection tools regularly. Publishers' catalogues, booksellers' catalogues, catalogues of government publications etc., form the major tools used for selection of documents. In more than half of libraries, library and teaching staff does the identification and preparation of list of documents, only library staff does it in 17.30% cases and teaching staff in 24.7%. Only 3.5% of professional staff working in college libraries is specialised in selection skills and subjects as well. Collection development policy forms the basis for selection of documents only in 7.5% of college libraries. The students' demands (70.20%); HOD's recommendations (63.20%); faculty recommendations (61.20%) etc., form the basis for selection. The formal approval of the selected documents is required in large majority (90.20%) of college libraries. The principal of the concerned college is the approving authority in large majority of libraries (63.50%), followed by library committee (10.70%) and management of the college (25.80%). The budgetary considerations form the major basis for approving the list

2.5 Acquisition

The verification of bibliographical details of documents selected is not undertaken in nearly forty per cent of college libraries. Identification of duplicates from the list of documents selected is not undertaken in 32.20% of libraries. Majority of college libraries order for multiple copies of documents. Direct purchasing is the method followed for acquisition of books in most of the college libraries. Apart from this, on approval order method is also followed. Local suppliers form the major source for acquisition of Indian as well as foreign books. Majority of college libraries are acquiring Indian periodicals directly from the publishers while foreign periodicals are acquired through vendors in India. More than three fourth of college libraries place the orders for documents directly for acquisition of documents. Discount offered; service and speed of delivery forms the basis for selection of vendors. Majority of libraries are getting documents by surface mail and very few by airmail. A time lag of one month in acquisition of Indian books while more than two months is found in case of foreign books. Reminders are sent for non-supply of documents by majority of libraries. The financial constraint is foremost among the several problems faced in acquisition of documents.

2.6 Collection Organisation

Nearly, one third of college libraries' collections have not been classified. Of the remaining, more than half of college libraries are using Dewey Decimal Classification Scheme, while 36.50% are using Colon Classification Scheme. Inadequate staff is the major problem faced in classifying the documents in more than half of college libraries. Insufficient funds to purchase schedule (N=77; 41.20%), lack of adequate staff (N=150; 80.20%) and support from authorities are some of the reasons for not classifying documents in college libraries.

Fortyfive per cent of college libraries have not maintained the library catalogues. Of the remaining, Classified Catalog Code and Anglo-American Catalog Code, 2nd edition are used for cataloguing of books in majority of libraries. Either classified or dictionary catalogs are maintained in libraries. Card form of library catalog is found in large number of libraries. Computerised catalog is found only in two libraries. Inadequate manpower is the major problem faced in cataloguing of books.

Neither non-book materials are classified nor catalogued in any of the college libraries. Large majority of college libraries neither have shelf lists nor authority lists. A majority of the college libraries use almirahs for arranging books and it is followed by bookracks. Documents are arranged in single sequence, in a large majority of college libraries, while broken sequence is followed in approximately thirty per cent of libraries. A majority of the college libraries (78.30%) prefer to arrange the documents on the shelves by subject. Inadequate space and insufficient number of almirahs and bookracks are the major problems faced in arrangement of documents in majority of college libraries. Closed access is practiced in majority of the college libraries.

2.7 Collection Management

A great majority of college libraries are taking measures for preservation of documents. Binding, minor repair, regular cleaning and dusting are the major methods adopted for preservation by many college libraries. Preventive measures are not taken by large majority of libraries. Three-fourth of college libraries are facing the problem of missing/tearing of pages. Nearly forty five per cent of college libraries are not identifying the less used documents for storage and weeding.

More than eighty per cent of libraries do undertake binding. A great majority of libraries (N=537; 94.00%) conduct stock verification annually. Nearly seventy per cent of libraries do not evaluate their collection. More than half of college librarians feel that their library collections are moderately adequate. The resources and facilities are used to the maximum extent in 73% of college libraries. Financial constraints and inadequate manpower are the major problems in collection management.

3. INTEGRATING QUALITY IN COLLECTION DEVELOPMENT: A PROGRAMME OF ACTION

Majority of college libraries in Karnataka State are confronted with insufficient resources–manpower, information, financial and physical including use of information technology for library applications. Now, the question is how to integrate quality in collection development? The strategy these libraries have to follow to achieve quality in collection is given in the form of a programme of action.

3.1 Identification and Mapping of Information Needs of Students and Faculty at the College Level

Only forty out of five hundred seventy one college libraries are undertaking user studies. Out of which, only thirty-two are conducting studies at the institutional level regularly. Therefore, the librarians of college libraries in Karnataka State have to undertake studies aimed at identifying and mapping the information needs—curricular and extracurricular—of students and teachers of their colleges. A clear understanding of the mission of the college and in-depth study of its academic and research programmes – current and future – will facilitate in getting better insights of the needs and requirements of the college. As a first step towards this direction, librarians have to identify and make a detailed study of core, peripheral and related disciplines of interest to the college keeping in view the formal courses offered at different levels following the methodology of studying a subject recommended by Bhattacharya.[1] The methodology to be followed for identification of information needs of users includes: the study of the nature and type of college and its environment; study of the users' specific environment; study on users and about users; formal interview and analysis and identification of information needs.[2]

3.2 Need for Written Collection Development Policy

It is imperative that in order to integrate quality in collection development, a collection development policy is formulated on the basis of mapping of information needs of the college following the guidelines formulated by Collection Development Committee of Resources and Technical Services Division, American Library Association (1976).[3] Such a policy will help in deciding what to select or what not to select for the library. The five levels of collection development Comprehensive, Research, Study, Basic and Minimum level as proposed in the above said guidelines are especially very useful for the college libraries. Issues, which require the serious consideration of college libraries and concrete program of action for integrating the quality in collection development include: (i) ownership v/s access; (ii) formats/media – print, non-print, microforms and electronic; (iii) languages, and (iv) resources sharing through networking

3.3 Need for Networking of College Libraries for Resource Sharing

There are neither programmes nor any initiative right now for networking of college libraries in Karnataka State. They are not sharing their resources with other libraries. Hence, it is suggested that the college libraries should initiate programmes towards establishment of library networks so that it is possible to exploit the networked information resources for providing access to information without actually owning it in this Internet era.

3.4 Selection

According to Feng[4], "to decide what to select and what not to select required the courage to chose what to have, and what not to have however tempting. And sound collection development policy provides such a rational and a remedy, lest vanity or timidity lead to astray". That means only CDP should form the sole basis for selection of documents for collection development in college libraries. "The library staff should not merely act as forwarding agents or clearing men between the vendors and faculties".[5] Book Selection in Academic libraries: Who can be the effective decision makers – faculty or library staff?.[6] This question doesn't come up as the sole responsibility lies with the library staff.

3.5 Acquisition

The acquisition procedures followed are very important, as the timely procurement of documents in libraries is an important criterion to be kept in mind in collection development. The libraries should adopt standard procedures, which are time saving and efficient and help out in procurement of documents without much delay. Integrating excellence in collection development assumes greater meaning where the financial resources are limited.

3.6 Collection Organisation

It does not suffice to select and acquire documents, the documents are to be classified according to a Classification Scheme and catalogued following a Catalogue Code. They are to be arranged systematically on the shelves in the library. Libraries must switch over from closed access to open access system. The organisation of documents strictly according to a classification scheme and maintenance of an up-to-date library catalogue (right now very few have) are the minimum facilities that the library must provide to its users.

3.7 Collection Management

Issues that require the deliberation and consideration of college libraries for integrating quality in library collection are conservation, preservation, evaluation, weeding, and storage of documents. Evaluation of collection needs to be undertaken regularly as seventy per cent of the libraries are not evaluating their collection. Regular weeding of collection is necessary to make the library leaner and fitter. As such the weeding is not undertaken in large majority of college libraries. In this regard, there is a need for evolving a policy at the state level for weeding of documents in libraries. Neither they have any programs nor any initiatives right now for creation of a centralised facility for storage of obsolete documents. Hence, there is a need for a program of action for establishment of central storage facility at the state level.

3.8 Need for Development of Knowledge, Skills and Attitudes

In order to achieve quality in collection development, it is not enough, if the college libraries have a programme of action. What is still most crucial and significant is the need for the development of knowledge, skills and attitudes among the college librarians to implement the programme.[7]

Knowledge of the:

(*a*) aims and objectives of the college;
(*b*) academic programmes of the college including the curricular changes, assessment methods and teaching and learning methods;
(*c*) role of the library within the college;
(*d*) various functions of a college library;
(*e*) range of services offered by a library;
(*f*) expanding role of information professionals:
(*g*) core, peripheral and related subjects, fields of users;
(*h*) selection tools;
(*i*) funding sources and fiscal realities; and
(*j*) users and their information needs, requirements and expectations;

Skills required are

(1) ability to

(*a*) study and perceive the needs of the college;
(*b*) communicate with the academic community and administrators;
(*c*) forecast the present and long range needs of the college;
(*d*) develop collection development policy;
(*e*) identify and use bibliographical tools – print and electronic;
(*f*) implement the collection development policy;
(*g*) balance the operating expenditures with the library's mission;
(*h*) process and organise the collection – print and electronic;
(*i*) evaluate the collection;
(*j*) undertake weeding, storage, conservation and preservation of collection; and
(k) adopt new techniques and technology.

(2) Outlook, including

(*a*) a positive attitude towards the college, profession, the library and its customers;
(*b*) a positive attitude in overcoming the constraints – physical, fiscal, and human, and
(*c*) a sense of responsibility.

Perhaps nothing is more crucial than the information personnel's knowledge, skills and attitudes in bringing excellence in collection development in libraries.

3.9 Role of Information Technology in Collection Development

The Internet, is gaining importance especially in view of emergence of networked information resources world over. However, the position of use of information technology in Karnataka colleges is very grim. A baseline survey of use of computers in college libraries reported by Maheswarappa and Tadasad[9] has brought to light that most of the libraries in colleges do not own computers. Therefore, colleges in Karnataka have to initiate a programme of action for developing necessary infrastructure facilities in phased manner and computerisation of their library activities and services to take advantage of the latest technology especially Internet.

4. CONCLUSION

Conclusively it can be said that challenges are many in integrating quality in collection development among college libraries in Karnataka State as most of these institutions have insufficient resources—manpower, information, financial, physical including use of computers and application of information technology to library and information activities. A programme of action as suggested if put into practice would facilitate in brining quality in collection development.

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Lack of Quality Services in Academic Libraries

H.S. CHOPRA

ABSTRACT

The paper traces development and evolution of library services in India. It highlights the pitiable condition of libraries at various levels, *viz.* schools, colleges, universities and research institutions. The author suggests some measures to reverse the trend of indifference towards library services, and a positive approach to induct purpose and professionalism in this area.

1. INTRODUCTION

India of ancient days was considered as educationally, economically, socially and religiously an advanced country. During ancient period most of the urbanite Indians were leading a civilised life whereas most of the countries in contemporary Europe were passing through dark and barbaric stage. Writing in India dates back to the period of Harappa and Mohenjodaro.

Kuru, Panchala, Videha, Matsya, Usinara, Tamila, Kasi, Nalanda etc. were very important libraries of ancient India. These libraries possessed a large number of manuscripts on various subjects. It was because of quality education and better library services that students from foreign countries used to come for study in these educational institutions.

During the medieval period there was no dearth of libraries but unfortunately only elite among citizens were permitted to use the manuscripts. With the advent of the Britishers the concept of library

underwent a change. The Christian missionaries, educationalists and librarians tried to make the library a public movement.

2. INDIA AFTER INDEPENDENCE

In 1947, the literacy rate was only 18.33 per cent, the number of good libraries was very small and that too only in big cities. These were out of the reach of rural as well as poor people.

India was left by the Britishers as an utmost poor country. Even after fifty years of Independence, 47.97 per cent of its population cannot read and write. A major part of finance of Central Government is being utilised for providing basic amenities to the poor people.

3. SCHOOL LIBRARIES

We have now about 6.88 lakh Government primary schools and 1.10 lakh secondary institutions. There are also a large number of private educational institutions. The central government as well as the state governments are continuously making efforts to provide the basic necessities to the primary schools. In some areas the schools lack proper buildings, water arrangement, furniture etc. Facility of providing libraries to these schools cannot be materalised as it involves substantial expenditure which our central as well as state governments cannot afford. Children are as very receiptive to knowledge and proper knowledge can transform their lives, new ideas can motivate them to better thinking and better style of life.

4. SECONDARY SCHOOL LIBRARIES

At present there are about 1.10 lakh secondary institutions in India. Albeit these have qualified and trained teaching staff yet the position of libraries is very disappointing. Most of the schools have a limited number of books which are seldom issued to the students. Generally these libraries are without the basic reference sources. Till such time there is an annual grant for the purchase of books these libraries cannot have latest and informative books. This is the stage when the students want proper guidance for their career. Such guidance is easily available in career guidance books which these libraries should acquire. Subscription of two or three newspapers is not sufficient. In

most of the schools one of the teachers is given the charge of the library. In certain schools where there are librarians they are only matriculate plus diploma in library and information science. Surprisingly, the teachers are better qualified but not the librarians. In comparison to developed countries our children and high school students are at a great loss. Private and convent schools are paying attention to the libraries but that too cannot be considered as sufficient

5. COLLEGE LIBRARIES

Now there are about 10,000 colleges in our country which are providing higher education to about 70.78 lakh students. The number of teachers is about 3.31 lakh. No college is given affiliation until it has a proper library.

Position of the college library differs from the rural to the urban and from degree college to post-graduate college. In the beginning some books are purchased for the purpose of affiliation but later on for lack of regular grant the yearly purchase goes on dwindling. In certain colleges even Rs. 500/- are not allocated for one subject. Secondly the rural colleges prefer to purchase those help books which the students prefer to study from examination point of view.

In urban degree and post-graduate colleges the situation is little better but these also face financial constraints. Because of post-graduate classes some research oriented books are also purchased by the libraries.

However, the position of research periodicals in colleges is almost disappointing as no college is in a position to purchase foreign periodicals or costly Indian journals. Most of the colleges purchase some periodicals of general nature or of entertainment type. Lack of computerisation of complete library is another reason for barrier to quality satisfaction.

6. UNIVERSITY LIBRARIES

There are about 229 universities which consist of conventional, agriculture, technical, deemed, medical and open universities. Each university has large library which consists of various sections. Reference section is an important section which continuously provides informa-

tion to the readers. However, the other staff is also always ready to answer the queries of the readers.

Before considering the standard of satisfaction of readers one must know that at present about 10 lakh books and two lakh periodicals are published annually in the world market. In India the number of books published is about 60,000 of which one third are in English and the rest in different Indian languages. Similarly about 7,000 periodicals are published in India. No library, nor even university library can purchase the complete Indian publications what to speak of publications in English from world market.

On average basis one university purchases books from 3000 to 8000 rupees per year and most of the universities are subscribing not more than three hundred foreign periodicals. Indian periodicals are comparatively cheap but their research value is not equivalent to foreign periodicals. Even the university libraries are finding it difficult to continue with core journals. Because of inflation and devaluation of Indian rupee the university libraries are decreasing the number of foreign journals year after year.

Most of the departments are subscribing merely 5-10 foreign journals. This small number of research journals has its effect on the new research in a university. Even the INSDOC is subscribing to a limited number of foreign journals.

Undoubtedly, the developing and poor countries like India have become only information consumers and not information producers. The researchers in India who want to do some original research find it very difficult with the available sources in the libraries.

Much is said about inter-library loan and resource sharing but practically almost all the libraries avoid to spare any document even for a short period. My visit to certain universities show that not even a single document has been received or sent on inter-library loan.

Knowledge explosion is so enormous that every demand of reader or researcher cannot be satisfied. Advent of information technology is infact a boon for the libraries as well as librarians. Private schools in urban areas are providing this facility to the students whereas the rural children/students are yet not able to avail of this facility. In colleges the process of computerisation has started which will enable the librarians to satisfy the queries of the readers.

Internet facility is very helpful in providing the basic information

to the readers. However, the research journals can be consulted only on payment. Thus, library users in developing countries are at a disadvantage. Bibliographic information is freely available on internet.

Barriers to quality library services are many in the developing countries therefore, concept of quality assurance is still a far cry for Indian library users.

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Motivation and Training Needs of College Library Staff in Rural Areas

DHANASHREE P. RAULKAR

ABSTRACT

This paper lays stress on motivating the library and information personnel in rural libraries so that they became conversant with the new technologies and their applications in the library. It discusses the training methods and aids helpful in the growth and improvement of the individual and job.

1. INTRODUCTION

The impact of new technologies is seen in almost every human activity. The growth of information technology has changed the pattern of collection, storage and transmission of information. For the modern information services it will be essential to provide access to databases and databanks. In this era of IT, personnel familiar with it are required to exploit information resources most effectively and efficiently. They should also acquire programming abilities to use and develop software, creation of databases, development of profiles etc.

It is necessary to develop appropriate manpower in libraries specifically in the rural areas, to achieve allround development.

2. PRESENT SCENARIO

In the recent years some developments have taken place which lay emphasis on modernisation of library services. Recently INFLIBNET

of UGC has emerged as an ambitious library and information system which links library and information centres of universities, institutions of national importance and R & D institutions etc. Besides this general, specialised and various local networks, such as NICNET, INDONET, BONET, DELNET etc. have been developed.

Many of the library and information centres such as DESIDOC, INSDOC, BARC etc have installed facilities far on-line search of information in the international databases.

It is a happy augury that the staff attached to university libraries, special libraries and certain college libraries situated in metropolitan cities have acquainted themselves with the application of IT for library oriented activities. But there seem to be very little efforts in the direction of introducing the technological developments in academic and public libraries especially in the rural areas.

Reference can be made to Vidharbha region. In Vidharba total 294 colleges are affiliated to Nagpur University. These are the colleges from Nagpur, Bhandara, Chandrapur, Wardha, Gadchiroli and Jalgon areas. Out of these only 6.8 per cent of colleges have adopted computers for the use in the library. Amravati University and Dr. Babasaheb Ambedkar Marathwada University are no exception to this.

This may be due to

(*i*) Lack of motivation and awareness on the part of librarian
(*ii*) Non-availability of skilled personnel
(*iii*) Lack of training opportunities to handle sophisticated tools and machineries
(*iv*) Financial constraints etc.

But this state of affairs will be set right if the librarians come forward to adapt themselves to the general and prevailing trend. The present scenario of library staff, their inclination for training, methods of motivation for personnel and training methods have been discuss in this paper.

3. CATEGORIES OF LIBRARY STAFF

Depending upon the nature and level of duties performed the library staff they can be categorised as professional, technical and general. These categories can be described as follows.

3.1 Professional Staff – Senior Librarian

Senior librarians who are on the verge of retirement may not be inclined to learn the latest technology, they may feel shy. They may have apathy towards IT.

3.2 Professional Staff – Who Attained Qualifications More Than Five Years Ago

They are likely to vary in their skills and expertise with respect to IT. Some of them may be experts in IT and know one or two systems in depth. Some may be computer literate but have no library work experience which relates to IT, while others may know nothing about IT and possibly don't want to learn anything about it.

3.3 Technical Staff

Some of them, if they are newly recruited, may have some information technology skills but they may lack in library experience while others may vary in their skills and expertise with respect to IT or they may be new learners of IT. So, it is necessary to create library specific staff development programme.

4. MOTIVATION

Motivation implies drive, desires, needs, wishes and similar forces. Efficiency of personnel increases depending upon the degree of motivation. The productivity and satisfaction of personnel could be increased by providing adequate sources to serve as incentives for achieving a higher quality of work. When people motivate each other the working climate becomes ideal.

It is generally observed that the management of the colleges have a general apathy towards computerisation as it involves large amount of investment. Computer literacy is now widely accepted as an essential part of elementary education. But rural and semiurban areas are lagging behind in terms of IT. This may be due to:

(*a*) Lack of infrastructural facility.
(*b*) Lack of skilled personnel.
(*c*) Lack of motivation on the part of librarian.
(*d*) Apathy of management towards computerisation as it involves large amount of investment.

Motivation plays an important role in creating an environment conducive to the desired performance. In order to motivate this strata of personnel several motivating factors can be employed. Some of them are discussed in the following:

(*a*) *Setting sufficiently challenging goal that inspires a sense of commitment:* Taking into consideration the computerisation work already done in other libraries, professional organisations like ILA, IASLIC should inspire the personnel in this direction. They should periodically publish the list of IT trained persons. This will act as a competition factor which will definitely inspire the personnel to work hard and help in setting goal. Professional organisations can do external control and provide avenues for training to achieve this objective.

(*b*) *Genuine appreciation and encouragement of good work done:* Managements in general have realised the importance of IT and that it has to be adopted sooner than later. If the librarians achieve competence in IT on their own by getting trained voluntarily at their own cost, they will earn an all-round professional appreciation for it.

(*c*) *Creation of wider opportunities for self improvement and participation in decision making:* IT trained librarians can take the lead in their parent institutes by introducing IT application projects in areas other than library and thus will be inducted in decision making mechanism.

(*d*) *Arousing the feeling of achievement:* For realising one's full potential for creativity and self-development the professional organisations should focus on sources of motivation like social, esteem and self actualisation needs to motivate personnel.

(*e*) *Job enrichment:* By gaining competency in IT the college librarian should provide access through various bibliographic databases for improving services to users.

(*f*) *Reward and punishment:* Here the well known carrot and stick principle can be applied with necessary modification. This relates to use of rewards and penalties in order to induce desired behaviour.

In this regard steps taken by the Government of Maharashtra to induce its employees to get trained in IT are worth mentioning. It had announced that the government would not only reimburse the full course fees of IT training to those who successfully complete the IT course but would also pay Rs. 3000 as an incentive.

Alternatively, in order to make its personnel IT literate, the management of the organisation should involve itself in this job with

carrot and stick approach. For the employee who do the computer course of specific duration, management should share the course fee with its employee (carrot) and the persons who perform the task well are given rewards in the form of bonus, raise, promotion etc. In the changed social order in view of various legal provisions it is not possible to take recourse towards punishment in the form of demotion, termination from service etc. (stick).

However, the fear of punishment in the other forms such as stopping of increments as is done for those who fail to clear NET/SET (National Educational Test/State Eligibility Test) for lecturers in universities and colleges. Introduction of practical paper on information technology in NET/SET examination will also be of great help in developing IT skills amongs the librarians.

The mixture of rewards and punishment should be judiciously applied to achieve desired and positive results.

5. TRAINING METHODS

In order to achieve capacity building of staff, some of the training methods that could generally be applied are: (*a*) Self learning; (*b*) On site training courses; (*c*) Off site training courses.

(*a*) Self Learning

Self learning is that mode of learning where learners may initiate their own training process and may have control over what, when and where they learn.

(*b*) On Site Training Courses

The library or parent organisation should conduct training programme that includes formal courses, workshops and individual training sessions, individual assignments and projects.

The parent organisation should liberally organise such training sessions and workshops. This will help in developing necessary skills and knowledge related to storage, transmission and retrieval of digital information.

(c) Off Site Training Courses

These courses are held outside the library or parent library and may include the following kinds of activities

- Courses, seminars, conferences, workshops end visits etc.

- University, libraries, librarians of CSIR laboratories should volunteer to deliver a formal talk in various colleges of the rural areas.
- The other automated libraries should invite such strata of personnel in their libraries.
- Professional organisations should develop Internet based tutorials, packages or sites where library personnel can access the information.
- The package should cover the following aspects:
  – Use of computers for beginners
  – Use of Internet
  – Search engines
  – Application of IT base sources in libraries etc.

6. CONCLUSION

Time has come when the professional associations and IT trained librarians should come forward to take up the task of making the college librarians in rural areas IT literate. This will not only help to raise moral of the rural librarians but would also help to raise the status of the profession in general.

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Need for Quality Management in University Library Services

L. VENKATESWARA RAO

ABSTRACT

The quality in the services and documents of university library is essential to satisfy the academic community comprising faculty members, research scholars and students. It is an important factor in determining the performances of any library, measured in terms of highest return and user satisfaction. This superiority of the service can be achieved by a good quality management. This paper deals with the basic concepts of quality management in delivering desired services. It states the present conditions of university libraries and stresses the need for implementation of quality management for user satisfaction.

1. INTRODUCTION

The present world is becoming increasingly conscious of information exploration and its implications. A library exists to provide services acceptable to users to their fullest satisfaction. The user always expects value for the time spent in getting the required service. The success and failure of a library are gauged by the efficiency of their response. The library has to adopt sound and newer management principles to cope up with the present economic pressures, structural changes and technological innovations. To satisfy the complex and ever increasing information needs of users through quality service, the library is to opt for quality management.

The quality is very much emphasised in academic libraries. The performance is measured in terms of total satisfaction of the users. A quality service is one that fully meets expectations and requirements

of those who use it. This type of service requires to provide information which is free of error and includes accuracy, timeliness, completeness, friendliness and courtesy, anticipating user requirements, knowledge, and reputation. Quality is not a static concept. It is a continuous and never ending process. It changes with time and environment. Quality improvement is essential for any type of organisation to survive in this competitive world by identifying defects, errors and complaints by an approach that goes beyond the traditional values.

Many of our university libraries are still following the traditional nature of services. The activities like circulation systems, information dissemination systems and reference services are age old and have neither changed nor advanced with time. The university libraries have to change away from their traditional role as mere custodians of the available printed material. They have to adopt new methodologies of information storage, retrieval and their integration into existing collections and the services they provide with an eye on quality. To incorporate the changes with new information technologies, the university management has to play a positive role.

It is also not too late to rectify the deficiencies of library services and to bring effectiveness by reorganising and planning the library services. The quality management is an effective tool which can help the university libraries in bringing high quality services.

2. BASIC CONCEPTS OF QUALITY

A large number of definitions are available for quality. Quality is defined in terms of provider or supplier oriented and also in terms of user or customer oriented. The quality emphasises on the value for the customer or user in terms of services from the product or services from an individual. The concept of quality has been changed from supplier oriented to user oriented. It is not producer defined but it is user required. There was a time to define quality of libraries on the basis of the size of collection, availability of resources, and the number of services provided by them but now this is assessed on the basis of user's satisfaction. Customer or user satisfaction is always based on both the process and outcome. The process is how a user is treated during the service interaction and outcome is the actual end result. The performance of the service of any library is measured against the user expectations. If the expectations of user exceed, the service is

evaluated as high in quality. The quality of any library is measured in terms of reliability, responsiveness, assurance, empathy and tangibles. The quality service depends on how well various elements function together in a service system. If a library serves its users with his or her required information pinpointedly, exhaustively and expeditiously, it is the indication of its quality service. A quality service is one that fully meets expectations and requirements of those who use it. Quality is often defined as fitness to use or conformance to requirements.

3. QUALITY MANAGEMENT

The objective of quality management is to meet and exceed customer expectations by providing a product or service with built-in quality. Quality is always linked with users. Quality management brings the quality service which fits to the user's purpose. But the needs of users are not universal and static phenomena. It keeps changing from user to user and also for one user it changes with time. One library's strength may lie in quality planning, emphasising definition of quality goals, objectives and standards whereas, another library may focus on active collection of information on customer's needs and preferences. The father of the quality revolution. W. Edwards Deming developed fourteen points for evaluating quality management level. The fourteen points provide criteria by which any one in the manufacturing or service sector may measure the performance of management.

Deming's fourteen points are:

(*i*) Constantly improve the quality of products and services
(*ii*) Adopt the new philosophy
(*iii*) Eliminate the need for mass inspection
(*iv*) End the practice of choosing supplier on the basis of price alone
(*v*) Constantly improve the system
(*vi*) Institute training on the job
(*vii*) Institute leadership
(*viii*) Drive out fear
(*ix*) Break down the barriers between departments
(*x*) Eliminate slogans, exhortations and arbitrary targets of the work force.
(*xi*) Eliminate numerical quotas for the work-force and numerical goals for management.

(*xii*) Create pride

(*xiii*) Institute a vigorous programme of education and self-improvement for every one

(*xiv*) Make everyone in the firm take action to accomplish the transformation.

Two principal frameworks have been developed within the quality management theory to enable identification, specification and measurement of quality management level of an organisation.

(*i*) ISO-9000 and (*ii*) Total quality management (TQM)

The quality system standards which are provided in ISO-9000 series are needed to maintain quality consistently and for continuous improvement in any organisation. The process of acquiring an ISO-9000 certification itself contributes to improving quality in the functioning of an organisation. ISO-9000 is one of the most widely recognised quality management tools. It is a series of quality system standards formulated and published by International organisation for standardisation. The need of ISO in libraries is well-accepted.

Total quality management (TQM) is a broader framework than ISO-9000. The concept of TQM is presented in the works of Deming. Total quality management is defined as an effective tool to obtain total quality by involving everyone's daily commitment. The process of implementing TQM can be in four stages (*i*) Identification and preparation (*ii*) management understanding and commitment (*iii*) scheme for improvement (*iv*) new initiative, new target and critical examination. The main elements of TQM are (*i*) quality is customer defined (*ii*) internal and external customers (*iii*) employee involvement (*iv*) error-free processes (*v*) performance measurement (*vi*) continuous improvement. The total quality improvement can be achieved by using appropriate quality techniques.

4. QUALITY MANAGEMENT IN UNIVERSITY LIBRARIES

The university libraries are moving away from the concept of building up large collections to facilitating access to maximum information for their user satisfaction. Speedy access to information is more important than storing information or documents. User satisfaction can be achieved by serving the literature and information needed by users in an exhaustive, expeditious and pinpointed fashion. The

services of university libraries could be managed efficiently and economically through the quality management. The Management, professionals and users of any service organisation like libraries have to share their responsibility to bring quality. Without support of the management and the users, the library can not be burdened with the responsibility of maintaining quality. There are many approaches to measure quality such as complaints, suggestions, customer surveys, bench marking, employees surveys and suggestion boxes.

The present university library services are in unsatisfactory condition. The reasons for this condition is mainly due to (*i*) lack of coordination between library staff and faculty members (*ii*) unsympathetic attitude of the university administrators towards allocation of funds to library development (*iii*) Lack of interest on the part of the library professionals due to the vagaries of status as the faculty considers itself superior to librarians (*iv*) increasing prices of books and periodicals and inadequate funds. The library budget is not proportional to the steep rise in prices which limit the size of information resources (*v*) lack of initiation by the university libraries in adopting advanced information technology. The university libraries fail miserably in inculcating the habit of library use in the academic community. It is essential to improve the services for total satisfaction of the users. This can be achieved by implementing quality management. Every one in the university library has to contribute his or her best for achieving the objectives of their organisation. Everyone has to work to satisfy the users with their needed information. The whole philosophy of work has to be changed.

The staff in the circulation section of university library should think that their work is not just to issue and receive back the books, but to satisfy all circulation related demands of the users in terms of the process and the outcome. The library professionals are expected to satisfy the information searchers by asserting to get their specific information in the least possible time in the form, most appropriate to the user's requirements. The employees in the university library have to be provided opportunities with concepts of quality management and problem solving techniques and have to be provided opportunities to participate in courses relating to the advanced information technologies.

Successful implementation of quality management in university library is based on the decision of its users. Support from university

management to implement quality management principles is a must. The management have to ensure that the individuality of the employees are sufficiently respected and then only they will have sufficient autonomy to work freely on their own initiative. The employees should be able to exercise their intelligence and think about their work. This will ensure improvement of the quality of work and their creativity. The environment in which all employees are able to fulfil their human potential and perform worthwhile work, is a suitable example of the vital concept of quality management.

5. CONCLUSION

The quality management serves as an effective tool to achieve quality in services of any library. The employees in library under quality management do the same job as they were doing previously but in the new environment. The addition of work in library does not mean the quality improvement. The quality in services of university library can only be achieved by intelligent efforts. Organisational as well as staff effectiveness in university library is a tool to achieve quality. The quality management provides a powerful framework for effective services in the library. It is not a one-time approach but it is a continuous process. By implementing the quality management, the university library may achieve its objective in more effective way and make the library more visible within the university by getting recognition for the unique and vital role it plays in providing quality service in university set-up.

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Quality Assurance in Collection Management in Some Selected Subjects: A Study of Karnatak University, Dharwad

R.M. VATNAL AND RAMESHA

ABSTRACT

It has been seriously discussed by the authorities to explore the possibilities of networking and utilisation of available Information Technology for collection management in some selected subjects. In the Karnatak University Library organised efforts are made to follow the procedures and guidelines in the collection management. All these experiments are discussed in detail in the present paper.

1. INTRODUCTION

The objectives of the libraries have shifted from preservation to dissemination of information to the utmost satisfaction of the users. The term collection development had been evolved to emphasise response to users' demand. Collection development is also called 'Selection or Acquisition'. James C Bahugam defined, that collection development is "a plan which can be implemented, evolved and represented as follows: collection planning + collection implementation + collection evaluation and collection development.

Collection development is a process of maintaing balance in, consistent and user responsive collection based on curricular and research programmes of the university. Thus, the collection building is based on the selection of current as well as retrospective absolute materials. With shrinking budgets, libraries have to maintain balance between the provision of learning and research materials.

Karnatak University library is managing a collection for interdisciplinary fields such as Micro-Biology, Computer Application/Computer Science, Information Technology, Pulp and Paper Science, Genetics etc. Interest in interdisciplinary studies as an academic discipline has grown tremendously since two decades. Programmes in interdisciplinary studies have proliferated and are attracting the increasing number of students. This poses special problems for librarians, who are responsible for building collections covering the diverse fields related to interdisciplinary studies; how best to locate, organise and develop access to materials to satisfy user's needs. This is aggravated in a library system where collection management responsibilities are distributed among librarian, staff and departmental subject experts.

The purpose of this paper is to describe the need for alternative approaches to manage interdisciplinary materials and for the development of a collection policy for physically and intellectually dispersed collection of library materials.

2. KARNATAK UNIVERSITY: A PROFILE

The Karnatak University campus is situated on a gently sloping hillock with the sylvan surroundings, providing a unique natural beauty and peaceful setting heavily wooded slopes. This is the second oldest university in the State of Karnataka. The University, which is celebrating its Golden Jubilee, is known nationally and internationally for its academic standards.

Today the University is offering the higher education in 44 departments and three Post-Graduation centres located in Karwar, Belgaum and Bijapur. The jurisdiction of Karnatak University covers the seven districts. There are five constituent colleges and 240 affiliated colleges. University has got its own distinction in the field of research and there are number of research projects sponsored by funding agencies in various subjects.

3. PROF. S.S. BASAVANAL LIBRARY

The university library was established along with the university. It started functioning from the same year *i.e.*, from 1950. The Library was shifted to its new home in the main educational building in the year 1959.

University library is well equipped with its collection catering the needs of the students, teachers and the researchers. Over period of time Karnatak university library is fortunate to have seasoned librarians who were responsible for developing the unique knowledge base of this university. The most valuable collection of this library is the United Nations documents. Since its inception Karnatak University library is having its up to date catalogue of books, periodicals (including back volumes) and the catalogue of theses and dissertations. The Library Advisory Board is the apex body of the library, it is headed by the Vice-Chancellor and the members, are selected from high powered bodies of the University and the teachers of repute.

Realising the importance of multidisciplinary subjects emergence, the library authorities are thinking of adopting modern technology to facilitate the multifaceted needs of the user community.

3.1 New Independent Library Building

During 1974, the Library Committee reviewed the idea of building new complex to meet the ever expanding library needs. By 1975 another 250 acres of land was acquired on the north west side and added to the campus.

The first phase, which has been now occupied, has the carpet area of 41,500 sq. feet and can accommodate over 3.7 lakhs volumes and 250 readers at a time. There are 24 cubicles for research scholars. The library has been shifted to its new building during 1981. The building is planned on a divisional pattern. When the second and third phases are completed there will be four separate divisions *viz.*,

(*a*) Reference and Text Books Collection
(*b*) The Science and Technology Collection
(*c*) The Humanities Collection
(*d*) The Social Science Collection.

3.2 Library Finances

The University Grants Commission and the state government are the funding agencies to the library for purchase of books and journals regularly. In addition to the UGC grants, the state government is allocating budget for purchase of books and periodicals annually.

The resources for the library finance are from,

(*i*) UGC grant

(*ii*) Sate government
(*iii*) Library fees
(*iv*) Reprographic service
(*v*) Overdue charges
(*vi*) NBHM grants

3.3 Book Collection

The library has a total collection of 3.7 lakhs books and back volumes of periodicals on various subjects. The library has special collection on Gandhian Studies, Ambedkar Studies and Women Studies.

4. NEED FOR REORIENTATION

Though price rise is a common phenomenon, the price hike in library materials has its implications. We may conclude that 'the increased costs of reading materials over the past decade have far exceeded the general rate of inflation and result has been a steady erosion of purchasing power of libraries'.

Moreover, there is a price discrimination in journals, publishers employ a three-tier pricing policy for journals; higher prices for institutional subscribes; higher prices for foreign subscribers as compared to inland subscribers and comparatively low prices for individual subscribers.

As a consequence, libraries are no more in a position to buy all that their patrons want and need. Their budgetary provisions for acquisition also increase steadily and thus they spend more but in return they acquire less.

4.1 Application of Information Technology

It is said that now we are living in a "global village", due to the impact of information technology. A similar situation is faced in the modern academic libraries. Here we have libraries 'without wall'. At Karnatak university library, this is achieved by participating in INFLIBNET (UGC) programme and also by accessing Internet. With the advent of networks, organised efforts are made for resource sharing agreements among nearby libraries. Inter-library loans are being done with the help of networks. On Internet, varieties of periodicals content pages are accessed free of charge and supplied to users.

4.2 Cooperative Collection Development

Cooperative collection development marks a total shift in the traditional library concepts, from the philosophy of possession that librarians world, wide have adhered to for a long time to the current philosophy of providing access to the information through a sharing mechanism. It calls for shared acquisitions, shared use and is a major factor for successful implementation of any resource sharing programme.

A cooperative collection development has several benefits both for those who seek information and those who are obliged to provide it. To the user, such a mechanism will offer an opportunity to have access to the information sources of a host of libraries participating in the cooperative collection development programme. The librarians will be freed from the frustration that they experience. As such, the programme would put on end to overlapping of resources among libraries, the financial pressure on libraries will also show a decline.

4.3 Exploitation of UN Depository Centre

The library has been recognised as a depository centre for U.N. publications ever since 1967. By virtue of being a depository centre, the library has been receiving the publications of United Nations and its allied agencies such as UNESCO, FAO, GATT, WHO, ICAO, IMF, UNIDO, UNITAR etc., The World Bank publications are also being received in this section. The centre now has a total collection of 21,315 documents.

This centre is the hub of information on interdisciplinary subjects. The costliest and more worthy publication of UNO and its organs are made available through this centre at a subsidised cost. This centre has attracted thousands of researchers from other universities and institutions.

4.4 Efforts to Consolidate the Financial Resources

Higher education is in financial crunches. Karnatak University is not an exception to this. So it has started many self-financed courses. In addition to these courses, it has also given birth to some of the enhanced fee structured courses. The funds collected in this way is being used for the purpose of developing the institute.

University authorities are also promoting university academicians

to take external research projects and surveys from the UGC, CSIR, DST, ICAR, ICMR, ICSSR, AICTE and state governments etc. So that there is free flow of financial assistance to the parent organisation. The assistance received from theses organisations and some part of the funds are diverted to develop the library collection.

5. NEED BASED COLLECTION DEVELOPMENT STRATEGY

Collection development has to be constantly guided by the requirements of the institution. In this information age, it is not practicably possible for any library to satisfy all the information needs of its users all the time. The librarians are still predominantly document oriented, and it is only in recent years that publications in electronic media have become available. It is important here, to note that many of the fundamental changes in libraries will occur more in the process than in the product.

Hence, the collection development policy has to be devised as a guide to assist the library in exercising its collection development responsibility within constraints but with an eye over new information technology developments.

5.1 Library Efforts

5.1.1 Library Automation

After installing the computer systems during September 1997, the university library with the assistance of UGC under INFLIBNET program has undertaken the following activities:

(*a*) Conversion of catalogue into MARC (Machine Readable Catalogue) using CCF-format and as per the direction of INFLIBNET. The MARC is ready to search on OPAC.

(*b*) Creation of database of Ph.D. theses accepted by the Karnatak University.

(*c*) Conversion of Kannada Online Public Access Catalogue is under progress. About 50,000 titles are being converted into MARC with the help of GIST card.

5.2 Services

(*i*) Bibliographical information services in selected databases in Social Science is available from INFLIBNET, Ahmedabad.

(*ii*) Content Pages of Periodicals in Science and Technology (COPSAT) service is available in the disciplines of Physics, Chemistry, Mathematics, Geology, Botany, Zoology and Computer Science.

(*iii*) Library is providing Internet based information services since 1997 apart from regular E-mail based correspondence to various foreign as well as Indian universities, organizations, institutions and companies. It is also possible to see contents of journals through Internet which are available on image and graphic form. university faculty and researchers are using this service.

(*iv*) Online Public Access Catalogue is readily available on library computers. Users can search his/her required document through author, title, subject and publisher keywords. This is also available on campus network.

5.3 Local Area Networking (LAN)

The Library Advisory Board and Library Automation Project Committee are closely involved in installing the Campus Network through FDDI (Fibre Distributed Dissemination Interface) network. It is planned in two phases.

I Phase: All Science departments, main education building and library are covered.

II Phase: Examination section, administration section, Kousali Institute of Management Science (KIMS), journalism and mass communication and Computer Science departments are being covered.

About two kilometers of Optical Fibre Cable (OFC) is already laid to connect all Science and Social Science departments. Presently Internet connection can be accessed through X.28 dial-up line.

With the help of campus networking it is possible to search national and international databases.

6. CONCLUSION

Collection building is an art by itself. In these days of escalation of prices, shrinking budget and ever changing technology, it is wise on the part of the libraries to change the age old attitude of the collection development. Even the dictum of Drurey is still pertinent and adds the new dimension to the new collection development policies and

procedures. Instead of deriving the privilege by acquiring all that is published under the sun, it is better to reorient the policies to suit the changing scenario. Adequate efforts be made to harness the available facilities and explore the potential of information technology. Karnatak University library is making all out efforts to integrate the quality conscious in the collection development, specifically in the emerging inter-disciplinary subjects.

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Quality Assurance in Library and Information Science Education in India with Special Reference to Panjab University, Chandigarh

RANJANA VOHRA

ABSTRACT

Proliferation of educational institutes in India and the new challenges thrown up by the recent advent of technology have put corresponding demands on the library profession. The paper analyses the latest trends and indicates steps being undertaken to brace up the competence of information system professionals.

1. HIGHER EDUCATION IN INDIA

India has a large number of higher education institutions which cater to the need of students. There are 216 central and state universities as well as deemed to be universities, 110 autonomous colleges and 7600 affiliating colleges. The sheer vastness of the system is comparable with U.S.A., however, the complexity is more pronounced in India because of their setting in urban, semi-urban, rural and remote areas, use of regional language for teaching and a diverse socio-economic and geographical background. Consequently, India has widely varying academic standards.

The higher education system is expected to give higher quality education in a broad range of academic and professional disciplines and subjects, and advance knowledge through fundamental and applied research and scholarship of the highest standards.

The trained manpower is expected to be a resource for variety of jobs, tasks and challenges that any country faces. Thus, higher

education system has to be a trustworthy architect of progressive society. Indian higher education system is under tremendous stress and strain and its respectability and credibility is under shadow. There is a dire need to devise and adopt procedures and strategies for imparting quality education.

2. UGC'S ROLE AND FORMATION OF NAAC

Under section 12 of UGC Act, 1956, the University Grants Commission has to take all steps for the coordination and promotion of higher education and for determination and maintenance of standards of teaching, examination and research in the institutes of higher learning. On September 16, 1994, National Assessment and Accreditation Council was formed. The mission of NAAC is to contribute to the maintenance and improvement of quality at all levels of teaching and research in institutions of higher learning, through its activities it would encourage self-evaluation, accountability, and innovations in higher education on a voluntary basis.

3. LIBRARY AND INFORMATION SCIENCE EDUCATION IN INDIA

Our society has become a world of information. It is thoroughly engaged in producing, processing and distributing information in one form or the other. Education, scientific and technical development, banking and financial management, government and corporate management—all depend increasingly on accurate, relevant and readily available information. New technologies have produced a wealth of media for distributing information. Books, periodicals and other printed forms have been supplemented and in some areas replaced by other forms—photographic forms (microfiche, microfilm, motion picture film, photographs), audiovisual forms (recording, audio and video discs and tapes, instructional media) comuter processible forms (magnetic diskettes, tapes, optical discs). Publishing, radio and television, telecommunications, computer networks—each providing new means for information transfer.

Libraries, information centres, and information systems of all kinds, have as a result become crucial agencies for the management of the resulting flood of information faced by every organisation and individual. The field of Library and Information Science is concerned

with the processes involved in these information agencies and, more generally, in the use of information by our society. How are records with essential information, whatever their forms may be, to be acquired, preserved, organised, retrieved and made available? How is information best used in making decisions and in meeting the goals of society as a whole, as well as those of specific organisations.

Librarianship is a profession with a diversity of opportunities and challenges. Work in the information profession requires knowledge of intellectual operations and a body of techniques, indexing, abstracting, technical information, management, technical writing and editing, media, computer programming, records management and archival work. It also requires a high level of individual responsibility—a recognition of the vital role in our society of free and easy access to information.

LIS education is currently facing a turning point. Various factors have contributed to bring about change from conventional to automated library operation. Today only computerised libraries can participate in networking at national and international levels. It is the only way in which efficient standardised and better service is assured, besides access to a world of information and data. Most of the computerised libraries suffer from paucity of competent personnel in top and middle managerial positions.

There is a need for periodical examination and analysis leading to necessary changes and improvements in curriculum for the interpolation of new and fast developing areas of information technology and computer science.

The educational preparation of libraries must be relevant to the needs of the society. The objective for training librarians is to promote library, to educate, to articulate the need of the clientele to increase productivity and economy.

Library and Information Science education in India was started in 1911 when W.A. Borden opened a Library School in Baroda. Presently there are more than 107 universities, institutions, affiliated colleges and associations providing training programmes in LIS education, including distance education programmes, besides specialised courses of INSDOC, Delhi, DRTC, Bangalore. The level of courses conducted by these institutions vary from certificate course, Post-Graduate Diploma course, Bachelor's degree/Master's degree to M.Phil and Ph.D. in Library and Information Science.

4. CASE STUDY OF DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE, PANJAB UNIVERSITY, CHANDIGARH

Panjab University, Chandigarh started a Post-Graduate Diploma course in Library Science in 1960. It was redesignated as Bachelor of Library Science from the session 1968–69. The university further instituted Master of Library Science course from the academic session 1970–71. Both these courses were redesignated as Bachelor and Master of Library and Information Science (B.Lib.I.Sc. and M.Lib.I.Sc.) courses from the academic year 1988-89. Each of the courses are of one year duration. Ph.D. programme in Library Science was introduced from the academic session 1972-73. It was pioneered by Dr. Jagdish Saran Sharma the then Librarian-cum-Head of the Department of Library Science. This programme too was redesignated as Ph.D. in Library and Information Science from the session 1988-89. The department has been running these courses successfully. Every year the department enrolls 40 B.Lib.I.Sc. and 16 M.lib.I.Sc. students. Since the commencement of the Ph.D. programme, so far 23 candidates have been awarded Doctoral Degrees.

The department has a faculty consisting of a Professor, two Readers, two Lecturers and one Lecturer-cum-Assistant Librarian. The department has its own departmental library-cum-workshop with necessary facilities for study and research. It has a collection of latest books and periodicals in the field of Library and Information Science, Information Technology and its application to Library Services. Under the Local Area Networking Programme the departmental library has been linked with the central library which is a computerised library with an integrated computer network system. Recently the department has acquired four computers and is in the process of setting up a computer laboratory for giving instructions and demonstration to students on computers and its application to libraries. So far, the department has been availing facilities provided by the department of Comuter Science and Applications for the purpose of teaching and training.

4.1 Curriculum Development Policy

The department has from time to time been revising the syllabi offered by the university keeping in view the developments taking place

in Information Technology, Information Resources, Information Access and their impact on libraries and library profession. The task of revising the BLISc course was jointly taken up by the Library and Information Science Departments of Panjab University, Chandigarh, Punjabi University, Patiala and Guru Nanak Dev Univesity, Amritsar in the year 1984. A draft syllabus was formulated which was later approved and adopted by the three universities from the session 1985-86. During the same period the department of library & information Science, Panjab University also revised its syllabus for MLISc. programme which too was implemented during the session 1985-86.

During the past decade major developments have taken place in the field of libraries and information centres. With the development of technology new media methods and practices have entered the realm of librarianship and added a totally new perspective to the profession. Developments in the field of computers and communication technologies have a direct bearing on the designing of course contents. The faculty too feels the necessity of framing a new curriculum or remodelling the existing syllabus and introducing a two-year integrated course leading to a Master's Degree in Library and Information Science. The MLISc programme should prepare students to pursue creative and meaningful careers in the information profession by providing a carefully designed and intellectually challenging educational experience.

B.Lib.I.Sc. Course (Prior to 1984)

Paper-I	Library Classification (Theory)
Paper-II	Library Cataloguing (Theory)
Paper-III	Book Selection and Reference Service
Paper-IV	Library Organisation
Paper-V	Library Classification (Practicals)
Paper-VI	Library Cataloguing (Practicals)
Paper-VII	Bibliography and Documentation
paper-VIII	Library Administration

B.Lib.I.Sc. Course (1984-85 onwards)

Paper-I	Library & Society
Paper-II	Library Classification (Theory)
Paper-III	Library Classification (Practice)
Paper-IV	Reference & Bibliographical Sources

Paper-V	Library Management & Operations
paper-VI	Library Cataloguing and Indexing (Theory)
Paper-VII	Library Cataloguing (Practice)
Paper-VIII	Information Systems and Services

M.Lib. I.Sc. Course (Prior to 1984)

Paper-I	Evolution and Pattern of Knowledge
Paper-II	Advance Reference Services
paper-III	Documentation and Information Retrieval
Paper-IV(A&B)	Advanced Classification (Theory and practicals)
Paper-V (A&B)	Advanced Cataloguing (Theory and Practicals)
Paper-VI	Options (i) Bibliography & Literature in Natural Sciences (ii) Applied Sciences (iii) Social Sciences
Paper-VII	Options (a) Organisation & Administration of Public Libraries (b) Academic Libraries (c) Special Libraries
Paper-VIII	Dissertation

M.Lib.I.Sc. Course (1984 onwards)

Paper-I	Universe of Knowledge and Research Methodology
Paper-II	Information Storage and Retrieval
Paper-III	Information Systems & Programmes
Paper-IV (A)	Library Organisation & Administration: Public Libraries (B) Academic Libraries (C) Special Libraries
Paper-V (A)	Advanced Classification (Practice)
Paper-V (B)	Advanced Cataloguing (Practice)
Paper-VI	(i) Bibliography & Literature in Humanities (ii) Social Sciences (iii) Natural Sciences (iv) Medical Sciences (v) Engineering & Technology (vi) Agricultural Sciences

Paper-VII	Depth Classification
Paper-VIII	(i) Dissertation (ii) Computer Application in Libraries/Information Centres (iii) Operation Research and Systems Analysis (iv) Education for Library and Information Science

The author proposes the following course content for a two-year integrated MLIS course which would, besides retaining the traditional areas of librarianship, provide basic professional competencies and knowledge in the field of specialised areas to the students.

(i) Information Access Systems

Exploration of new and established channels for providing information to the general public, including videotext, electronic publishing, databases, information utilities, computer mail and bulletin boards and conventional library operations.

(ii) Automation of Library Services

Overview of major components of library automation, online catalogues, serials, acquisitions and circulation systems, integrated systems, data conversion, library networks. Emphasis on practical skills and field experience in library automation.

(iii) Information Structures

Introduction to various systems and tools used to organise materials and provide access to them with emphasis on generic concepts of organisation, classification hierarchy, arrangement and display or records. Background study of cataloguing, reference, information retrieval and database management.

(iv) Information Resources and Services

Introduction to reference process, preparing questionnaire and developing online search strategies. Evaluation of reference sources and services, user education and bibliographic instructions. Study of printed and electronic versions of selected tools and computer based information resources.

(v) Principles of Indexing and Abstracting Techniques

Concept and methods of indexing monographs, serials and specialised materials of preparing informative and indicative abstracts and of analysing secondary abstracting and indexing services.

(vi) Collection Development and Acquisition of Library Materials (Printed and Non-printed)

Background of publishing and book trade pertinent of collection development in public schools, academic and special libraries. Theory and Practice of collection development and management. Organisation and administration of acquisition departments.

(vii) Management issues in Libraries & Information Centres

Principles of management techniques including management of human as well as technical resources. Survey of personnel practices in libraries.

(viii) Preservation and conservation of Library Material

Composition of and treatment for library materials printed as well as non-printed. Establishing preservation programmes, environmental standards, handling and use of library materials, securing measures and collection management.

(ix) Information Technology and Libraries

Data processing, library softwares, telecommunication and multimedia technology, infrastructural problems of IT applications in libraries.

(x) Information Retrieval Systems

Survey of principal vocabulary, methods of file organisation and search strategies in control of information in computerised form. User Centred design of information retrieval system.

5. SUGGESTIONS

Following are some the suggestions for quality assurance in Library and Information Science education in India:

(*i*) Departments of Library and Information Science may be given the status of Library Schools.

(*ii*) There should be greater emphasis on fieldwork and internships to provide supervised and professional level experience to second year students. Worksites should range from traditional academic, public school or special libraries to non-traditional information centres archives, museums etc.

(*iii*) Through career development programme students can be exposed to variety of career options in the field of librarianship. students may also have online access to professional positions through LAN.

(*iv*) Each department or Library School may be equipped with a computer laboratory housing computing equipment, CD-Rom databases, collection of applications software including databases management.

(*v*) The Ph.D. program should be well-defined covering major research areas such as policies and issues, information seeking behaviour, information use etc.

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Quality Control in a College Library: A Case Study

KIRAN KATHURIA AND K. NAVALANI

ABSTRACT

The paper is based on a case study of Government Mohindra College, Patiala, the oldest college of the North-India. Quality service here means the quality perceived by the users. Questionnaire was administered to users to seek perceptions about their reading behaviour. The paper interprets the data in terms of quality in service. It points out lacunca in the services provided by the library. It concludes that authorities are not giving proper attention to quality of service in the library and provides suggestions to improve the quality of services to make the library more effective.

1. INTRODUCTION

Organisations, we are aware, have been embracing 'quality control' to make themselves more efficient and effective. Academic institutions are no exception to this. They are integral part of the civilised society and have been playing their role efficiently in imparting meaningful education.

The library, as an integral part of an academic institution, aids in learning process as also in moulding the personalities of the young students in the crucial phase of their lives. Libraries are also conscious of quality control. Kits like SPEC kit and kits for quality improvement in libraries have been compiled.[1] There is an excellent book entitled *Total Quality Management: A source book* by O'Neil, 1994.[2] *Library Trends*[3] has devoted a full issue on quality control. Thus, literature relating to libraries is in abundance. Selection of the

theme 'Quality Assurance in Library and Information Services: The need of the hour for survival' by ILA for its annual conference speaks eloquently about consciousness of library profession in this regard.

The essence of a TQM based organisation is a customer-contered culture which emphasises continuous, incremental improvement of products and services.[4] In other words, there is a need to assess total quality based on performance measurement, and on the perception of the users about the organisation. Accordingly, it was thought proper to know the perceptions of students, the main group for whom the library and college exist. This is a pilot study at Government Mohindra College, Patiala, which is the oldest college of North-India serving the community since 1875.

The college is imparting education in the field of Medical, Non-Medical for + 1, +2 and B.Sc courses. It provides instructions to the buds in graduation, post-graduation in six subjects and honour school in four subjects in arts and social science. To kindle the minds to wisdom, one hundred and fifteen (115) teachers in the faculty of arts and sciences are doing well with their jobs.

It has a huge building, ever-expanding to meet the growing and changing demands of students and teachers. Unfortunately, this oldest college does not have an independent library building though several institutes which came up later have this facitity. This library has been allotted five big rooms and a verandah, which has been converted into rooms raising the number of rooms to eight. Thus, it is a make shift arrangement. Library is scattered, there is a bare sitting arrangement in the reference section and the stacks. The reading room has the capacity for eighty seats.

The library has nearly 80,000 books. About 50 journals and fourteen newspapers are subscribed, ten journals are received free regularly to enhance the knowledge of students.

2. OBJECTIVES OF THE STUDY

This case study explores the perceptions of student community about the library. It aims:

(*i*) To assess their reading behavior: Reading habit-frequency, Reading management and comfortability;
(*ii*) To know the role of library and how it is helpful to students;
(*iii*) To ascertain their quality consciousness;

(*iv*) To identify the problems faced by the students in using library; and

(*v*) To suggest possible solution(s) to improve the quality of service.

For this purpose, a questionnaire was designed by authors after going through the literature, to seek the opinion of the groups regarding the library and to get feedback about the quality of services. besides, it is also based on observation and informal talk to students and personal experience of one of the authors. Questionnaire was administered to those who visited the library during the week selected for the purpose. To seek the opinion of those who were not visiting the library was not considered proper. And as we all know, in the Indian context, students are not regular to the college

3. THE ANALYSIS

3.1 Profile of Respondents

At the time of the study, total student population of the college was 3848. Two hundred questionnaires were administered to four groups of users, *viz.* medical, non-medical, graduates and post-graduates. Thus, the sample forms more than 0.5 per cent of total students. Response rate was fifty one per cent. These respondents are of different age-groups. Twenty per cent respondents are 15 to 17 years old and 60.96 per cent are of 18 to 21 years age group, whereas 19.04 per cent respondents belong to above 21 years age group. Over 59 per cent respondents represent male community, and the rest are females.

An overwhelming majority (85.71%) of respondents is Punjabi speaking. Barring one, all the respondets are unmarried. Respondents, who passed out matriculation last year are 12.38 per cent and all are first divisioners, some of them having distinctions too. Those who appeared in +1 and +2 examination are 38.09 per cent and only 14.29 per cent respondents got first division. Out of 35.23 per cent respondents, who are doing BA/BSc, only 9.52 per cent secured first division. Surprisingly, 14.29 per cent respondents appeared in post-graduate examination and only 0.9 per cent (one respondent) achieved degree in first class. Obviously, it shows the difference between school culture and college culture.

The study reveals that fathers of the 38.09 per cent and mothers of 42.86 per cent respondets did 8th to +2 class. 27.61 per cent respondets are wards of graduate parents. Respondents having post-graduate fathers and mothers are 10.48 per cent and 8.57 per cent respectively. Fathers of 14.29 per cent respondents and mothers of 7.61 per cent respondents have professional degrees whereas, 8.57 per cent and 12.38 per cent of respondents have illiterate fathers and mothers, respectively. In other words, 50 per cent of respondets have the parents who are either illiterature or have studies upto 8th + 2 classes. A few respondents whose parents are illiterate are doing medical.

64.76 per cent respondents have fathers doing jobs whereas 76.19 per cent of respondents' mothers are housewives. Two-thirds of the respondents live in nuclear family. Respondents who come to the college from out of city are 43.80 per cent while 11.42 per cent are those who come from nearby villages. Parents of overwhelming majority (93.3%) of respondents have their own houses.

The study depicts that 60 per cent respondents used the library for the first time during schooling, while 27.61 per cent did so in college. Respondents have been ranked according to their purpose of reading, students reading for examination (61.90%) dominate, followed by 49.52 per cent reading for general knowledge, 45.71 per cent for preparing for competition and 28.57 per cent for entertainment.

Respondents who plan their studies and read according to a set time table are 65.71 per cent. Respondets who read three hours daily are 18.09 per cent and 26.67 per cent devote up to five hours daily for their studies. Others read above 5 hours daily. Most of the respondets (74.28%) read text books while 60 per cent newspapers, 36.19 per cent magazines, 31.42 per cent general books and 20 per cent consult reference books.

In this age of information technology, still the printed media has great impact on the users, as 58.09 per cent of the respondets prefer the printed media for reading, 12.18 per cent respondets marked the video media for reading and only 12.38 per cent prefer the audio media for reading.

The highest number of respondents (58.09%) spend their spare time by watching T.V. On the other hand, 49.52 per cent respondents read during their spare time. Only 49.52 per cent of the users do household jobs n their spare time. Although the satellite has many informative channels, yet it wastes the time of students and hamper their reading habits.

3.2 Reading Behaviour of students

The Table 1 elaborates the reading habit/frequency of visits to the library, reading management of the respondents, their place of reading and comfortability. Respondents who visit the library regularly, throughout the year and those who visit occasionally are almost same in ratio, *i.e.* 42.86 and 40.95 per cent, respectively. Only at the time of examination, 10.48 per cent respondents use the library, 5.71 per cent of respondents are those, who never used, the library. Surprisingly, 51.43 per cent respondents are those who either use the library occasionally or at the time of examination.

Talking about their reading management, those who depend on their teachers for the selection of reading material are 48.57 per cent. Those who seek guidance from friends and parents are 28.57 per cent and 15.24 per cent, respectively. Only 31.43 per cent respondents systematically manage reading. They first plan what to read, make the list and then try to get material. Those who have never planned reading and read whichever comes to their hand first are 42.86 per cent

Further reading behavior, reflects that an overwhelming majority (95.23%) of respondents reads at home and barring one, all the respondets feel the home a comfortable place for reading. Whereas, respondents who read at college library are only 38.09 per cent and out of them 30.48 per cent feel the place comfortable for studies. As compared to college library, it seems the respondents feel their home to be more congenial place for reading instead of the library. Probably, this is all due to inadequate library space and facilities. There is one reading room in the library and it is small too. It has eighty seats and with the total of 4000 users, only two seats are available for every fifty persons! Again paucity of space makes seating arrangement too crowded. The above results clearly show the lack of convenient seating space in the library.

3.3 Library services Used

Those who consult books in the library are 66.67 per cent. Respondents who borrow text books and non-text books from the library are 64.76 per cent and 34.29 per cent, respectively. 38.10 per cent respondents read text books in the library (Table 4). It shows that the library is mostly used for reading/borrowing text books.

Journals are read by 30.48 per cent of the respondents out of

Table 1: Reading Habit: Frequency

	M	% Age	NM	% Age	G	% Age	PG	% Age	Total	% Age
1. Regularly throughout the year	7	0.67	8	7.62	7	6.67	23	21.90	45	42.86
2. At the time of examination	0	0.00	0	0.00	9	8.57	2	1.90	11	10.48
3. Occasionally	6	5.71	7	6.67	27	25.71	3	2.86	43	40.95
4. Never	1	0.95	0	0.00	4	3.81	1	0.95	6	5.71
5. Total	14		15		47		29		105	

* M: Medical students, NM: Non-Medical students, G.: sraduate Studens, PG: Post-Graduate students.

Table 2: Reading Management

	M	% Age	NM	% Age	G	% Age	PG	% Age	% Age Total
1. Reading whatever comes to hand first	4	3.81	5	4.76	24	22.86	12	11.43	42.86
2. first plan and then try to get the same	5	4.76	6	5.71	9	8.57	13	12.38	31.43
3. What parents suggest	4	3.81	1	0.95	7	6.67	4	3.81	15.24
4. What teachers suggest	7	6.67	8	7.62	23	21.90	13	12.38	48.57
5. What friends suggest	4	3.81	5	4.76	13	12.38	8	7.62	28.57

Table 3: Comfortability

	M	% Age	NM	% Age	G	% Age	PG	% Age	% Age Total
1. At home	14	13.33	13	12.38	45	42.86	28	26.67	95.24
2. College garden	0	0	0	0	5	4.762	14	13.33	18.10
3. College library	5	4.762	3	2.857	17	16.19	15	14.29	38.10
4. Friends' home	1	0.952	5	4.762	6	5.714	14	13.33	24.76
5. Any public library	0	0	2	1.905	2	1.905	14	13.33	17.14

Table 4: Services Used

	Y	% Age	N	% Age	SFNA	% Age	NR	% Age	Total
1. Consulting Books in the Library	70	66.67	11	10.48	1	0.95	23	21.90	105
2. Borrowing Non-Text books from Library	36	34.29	47	44.76	0	0.00	22	20.95	105
3. Reading Text-books in the Library	40	38.10	34	32.28	14	13.33	17	16.19	105
4. Borrowing Text-books from the Library	68	64.76	24	22.86	1	0.95	12	11.43	105
5. Reading Journals in the Library	32	30.48	44	41.90	2	1.90	27	25.71	105
6. Borrowing old issues of Journals	11	10.48	61	58.10	3	2.86	30	28.57	105
7. Getting Bibliographies of the subject and recent books	9	8.57	67	63.81	5	4.76	24	22.86	105
8. Taking advice from Library staff on academic aspects of life	14	13.33	65	61.90	6	5.71	20	19.05	105
9. Borrowing documents from other Libraries if not available here.	22	20.95	63	60.00	3	2.86	17	16.19	105

whom 10.48 per cent borrow the old issues of the journals, too. Those who borrow the books from other libraries, if not available in college library are 20.95 per cent.

Only 13.33 per cent respondents seek the advice from library staff on academic aspects. It may be due to their unawareness, shyness or cold behavior of the library staff.

4. PROBLEMS FACED AND SUGGESTIONS OF THE STUDENTS

The elicited answers reveal that noise pollution is the major factor, which hinders their studies. Students also complain about lack of proper space and consequent congested seating arrangements. Some of them are also vocal that they do not get separate rooms at home and for some even table and chair are not available. Hence the need for space in the library. Science students also face similar problems College quarrels also create indiscipline and spoil the studying atmosphere as well as studying culture.

Students face difficulties suite books are torn out and/or not in good condition for reading. Lack of latest edition of books is also their complaint. They feel that the number of books issued for loan and the loan period are not appropriate. Issue counter does not work daily. PG students feel that lack of reissue facility hampers their studies.

Spend students have made very practical and useful suggestion for making library quality oriented. Most of the students do not know English language, so they suggested that more books in Hindi and Punjabi languages should be added. Some have asked for audio-visual material in Physics and Chemistry. Some have suggested seating arrangement near the stacks.

5. CONCLUSION

The terms 'quality' and 'effectiveness' are being used to mean the same thing: achieving a quality service that satisfies a high degree information and research needs of faculty, students and other users.[5]

This study makes it crystal clear that majority of students are not satisfied with the reading room accommodation and complain about noise level therein. For them, home is a better place to read than a library. The chief concern of a professional is to serve his clients. But

clients usually fail to believe that library professionals can perform expert role when the need arises and guide them in their studies. The findings of this study suggest that students depend either on their teacher, friends or parents for selecting reading materials. It implies that library staff neither motivates users nor encourages them to make better use of the reading material. Ignorance of students regarding the services provided by the library, further confirms that there is a communication gap between the users and the staff, so necessary for delivering quality services.

Faculty members are still the leaders in guiding the students. Presence of these leaders in the library can motivate their wards to use the library. As per ISO 9000 standard 'Top management is to involve itself in defining quality policy, clearly to take its responsibility for making available in-house resources and ensure that quality system requirements are met and reviewed periodically'.[8]

Unfortunately the college authorities, as the study depicts, do not even provide the bare minimum facilitate for example, proper accommodation for students as well as for staff is not available. Proper resources are not allocated. The library is not able to add latest editions of many required books.

Top management should help in providing library building. Library staff should be trained by orientation programme. User education is must for the proper utilisation of services. Above all, librarian should be more active in guiding the users in selecting their material for studies.

The University Grants Commission and/or Indian Library Association should play a constructive role and give a lead by framing guidelines for performance evaluation of quality services in the college libraries and appoint committees to evaluate the services. They should also arrange for training of librarians in Total Quality Management (TQM) to make them quality oriented. TQM requires involvement of top management for the betterment of services. They have to frame mission, policy, plan, programme and targets and make available requisite resources. The top management has to be sensetised. A joint seminar or conference of DPI (Colleges), principals and librarians should be held for the purpose. Then we can really contribute to the quality of life of the Nation and to the growth and development of the country.

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Quality Control in University Libraries in India

PREM CHAND SEHGAL AND K. NAVALANI

ABSTRACT

University libraries are accountable to the parent organisations and funding agencies for their performance and to end-users for service. In this context the paper underlines the need for quality control in university libraries. It outlines performance indicators related to quality control.

1. INTRODUCTION

We have been doing so much for so many years, with so little and for such a long time. Alas! We have not documented it properly to show to the modern society bitten by 'quality' bug! Shaughnessy also supports the above statement, when he states, "Quality is a basic value of our profession: libraries strive to deliver the highest quality service even though they may sometimes fall short of the goal. In the final analysis, quality is what libraries are all about."[1] Librarians have been conscious of quality since long. They have standardised their tools such as classification, cataloguing, subject headings. With the help of these tools, they have organised and stored millions and millions of documents and retrieved the relevant documents for a variety of users pinpointedly and expeditiously for generations. Their education and training is biased towards process standardisation. But modern society is concerned with quality control to meet the quality needs of society in general and an organisation in particular and embraces all activities being performed. "A total quality system is defined as

deployment of the quality system to all aspects of the organisation."[2] Total Quality Management (TQM) thus covers all activities: technological, statistical and organisational aspects and applies to all functional areas of the organisation.

2. QUALITY CONTROL

For quality control programmes in an organisation, it is very essential at every stage that intended documented system is adhered to by the management. It is essential for verification and corrective actions to be developed. It would point out discrepancies of any kind: administrative, professional, technological which could be rectified. It will indicate organisation's capability and diagnostic techniques required to initiate necessary improvements for its effectiveness. In a nutshell, quality control system requires data at every stage to take wise decisions. Efficiency of the decision-making process will depend on the efficient data system which requires accuracy and relevancy of data.[3]

In 1940s and 1950s librarians also started giving thought to library management.[4] Many professionals and researcher, conducted studies on performance evaluation. Literature started growing, Lancaster,[5] Baker and Lancaster,[6] Van House et al.,[7] to mention a few, have reviewed the literature. *Library Trends* devoted a full issue on 'Perspectives on quality in libraries'.[8] Australia and Britain also made their contributions in this direction. Kits and manuals were developed for quality control and maintaining standards and collecting data. Indian libraries are also awakening to quality control. And the decision of ILA to address this question in this annual conference is a proof that Indian librarianship is conscious of Total Quality Management movement which means managing change for improvement and accountability.

It must be acknowledged that country's investment in higher education and the potential role of university in achieving the growth and development of society, and scale of grants to individual institutions make it compellingly necessary that they come up to the expectations of the nation. Libraries are central facilities of universities and they attempt to fulfil the needs of their faculty members, researchers, students, etc. They are regarded as hub of academic activity in universities. Therefore, University Grants Commission provides grants to university libraries year after year to build and develop, to update and

modernise the facilities. Public funds come with accountability and performance evaluation, service and quality control, optimum utilisation of library funds with thorough transparency.

Quality control means feedback from the system. It requires paradigm shift in management. It needs mission and vision statements. Objectives and targets are spelt out. Short term and long term planning is done. And at every step, library managers, professionals and employees make assessment of their efforts in meeting the goals and mission. It requires new organisational culture. User services and satisfaction are the crux of the quality control.

3. PERFORMANCE FACTORS OF QUALITY CONTROL

Annual report of an organisation holds mirror about inputs, outputs and performance. This document records performance of a library every year. It is a public document. Therefore, this paper attempts to analyse annual reports of a few university libraries in India. The authors have visited many university libraries in the country and examined their records, budgets etc. This paper is based on first hand information and observation from the library professionals of these libraries.

Table 1: Information Given in the Annual Reports of University Libraries

Sr. No.	*Name of the University*	*Information given in A.R.*	*No. of pages*
1.	**M.D.S. University, Ajmer**	Collection, Budgets, Readers, Books and Periodical, subject wise breakup, Computerisation, Libraries facilities	2–3
2.	**Smt. Hansa Mehta University Library, Baroda**	Acquisition, Cataloguing, Circulation, Visitors, Reference, Orientation, Exhibitions, Bibliographies, National Library Week	2–3
3.	**University of Calicut**	Timings, Acquisition, Technical, Maintenance, Binding, Circulation Periodicals, Documentation and Computerisation, Research Activities, Publication Visitors, Expenditure.	2

Sr. No.	*Name of the University*	*Information given in A.R.*	*No. of pages*
4.	**Delhi University Library**	Statistical Table regarding Accessioning, Expenditure, Members, Visitors, Circulation, Books Written off and Consultation of Current Periodicals etc.	2
5.	**Jiwaji University Library**	Acquisition, Cataloguing, Automation, Audiovisual and Membership	1
6.	**Karnataka University Library**	Staff, Budgeting, Finances, Special Services, Library Advisory Board, Collection, Acquisition, Periodicals and Readincr services.	
7.	**Madras University Library**	Collection Working Hours, Users Processing Circulation, GAS, SDI	1–2
8.	**Tata Institute of Social Sciences, Mumbai**	Collection, Membership, Finances, Documentations, Automation and Computerisation services, GAS, GAS, Current additions	1
9.	**Jayakar Library, Pune University**	Committee-Collection, Budget, Information/References and Documentations Services, Promotion of Books Selection, Documentation, Computerisation, Visitors, Circulation Loan, Photographic Services.	
10.	**Punjabi University, Patiala**	Acquisition, Technical, Periodicals, Binding, Refernece Reprography, Circulation, Special Collections, Computer, Punjabi Reference, Staff Activities and Extension library.	3
11.	**North-Eastern Hill University, Shillong**	Collection, Expenditure, Timings, Automation, Basic Data of users, Journals Subscribed, Average no. of Readers, Avg. no. of books Issued daily, Books Added, Acquisition, Publications. Seminars/Conferences Attended by staff.	
12.	**University of Health Science Vijaywada**	Membership, Collection, Information services, Library Automation and Future Plans.	2

Even a cursory look at these documents indicates that there is no agreement among library managers as to what is to be given in these documents. Annual report of the library of a renowned institution contained only a few lines and another only bare statistics on a few indicators. While annual reports of some of them contained a few pages. There is no trace of mission statement either in annual reports or other documents. There is no mention of broader framework of planning, strategic planning programme reviews what to talk of self-appraisal. Accreditation, as we know all, is not required for the libraries. Nor they feel the need for ISO certificates. Further, statistics are not categorised according to groups of users, subject, language/form wise collections nor correlations are drawn. They do not indicate failure rates of users and time taken to access documents, percentage of non-use of documents, etc., to point out a few discrepancies for rectification.

The information given can be summarised under the following heads:

Working Hours
Acquisition – Collection
Finance
Processing
Membership – Users – Visitors
Loans
Services – Library Facilities
Reference, Documentation, Bibliographic Services
Other activities
Automation
Publications
Seminar/Conference attended by staff members

Few libraries have devised cost models for acquisition, processing and services or performance evaluation of the vendors in supplying the required documentations or their own performance evaluation relating to delivering services or products.

In future the vitality of libraries in universities will be dependent on whether they can dynamically and continually prove their value to the overall higher educational endeavour. Measurement of quality is

dependent on inputs-outputs, processes and systems, needs of users, management, leadership, environment, etc., use of collection and gaps in it.

There is no lack of advice and guidance on how to define quality and effectiveness.[9] Wolf (1995)'[10] proposes organising principles around which to focus the mission of the university, resources, research, students and learning. For each we list possible indicators of institutional and library quality. Cullen and Calvert (1995)[11] identify six performance factors related to quality control: staff, collection, facilities, speed of services, use policies and user groups which affect organisational effectiveness. Model of McDonald and Micikas[12] (1994) states sixteen dimensions of effectiveness: clustered to major domains: collection adequacy, staff and support, staff development, use of collections.

4. CONCLUSION

"Since the beginning of the 1990s, total quality management (TQM) and the library and information services (LIS) sector are approaching each other in many aspects."[13] Quality control movement is also essential in India. Like ARL in USA. 'National think tank' on library statistics in Austriala[14] it is compellingly necessary that ILA and/or University Grants Commission should give lead, and provide standards for performance measurement. UGC sends a questionnaire to every university library. It needs modification to collect proper statistics from libraries. Librarians and professionals should be given training in total quality control area. It is they who implement quality. Librarians should frame their missions, objectives, policies, plan, and spell out their targets and library reports should give information regarding achievements and failures.

But university libraries are dependent on university culture. Their mission, policies, plans and long and short term programmes have to reflect policies of their parent bodies. Quality control requires continuous commitment of top management for resources definition of mission, spelling out of policies and programmes, system for verification and improvement.[15] Are our universities willing to describe their mission, policies, programmes in such a way that the measurable criteria would not be phrased in terms of number of students, faculty members and courses only? Are they willing to embrace Total Quality Culture? It is a crore rupees Question.

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Quality Library Services in Academic Library in India: Future Trends

SUKHDEV SINGH

ABSTRACT

This paper discusses traditional and quality services in the academic libraries since the 'Quality Service' from the library and information centres will be the main demand of the future clientele. The concept of quality is changing fast. The shift being from 'provider oriented' to 'customer oriented'. The concept of TQM is gaining popularity in each and every walk of life. Quality in the library services can be built and maintained only through the continued improvement process. The role of top management in acquiring the TQM is the foremost. The professionals will have to be trained and retrained periodically. Continued Professional Development (CPD) will prove to be the key to achieve TQM in the library and information services in future.

1. INTRODUCTION

Academic libraries play a vital role in the dissemination of information to the academic community of the parent institution. The school and college libraries provide the required reading material to their clients, students and teachers, related to the disciplines taught. In the university libraries, more stress is laid on the material dealing with higher education and research, although their collection includes subjects of general interests also. There are at present 221 universities, 40 national level institutes and 10,555 colleges in India having libraries attached to them.[1] Until the 20th century, traditional type of services like Documents Providing Service and Reference Service, CAS and SDI etc. were provided to the readers by some of the libraries. The situation is changing fast with the application of Information

Technology (IT) in the libraries. The impact of IT has been felt to a limited extent in the last quarter of 20th century. In the 21st century, the scenario will be different from the one we are observing today,

2. QUALITY AND QUALITY SERVICE

The dictionary meaning of 'quality' are 'capacity', 'ability', 'skill' or 'excellence of disposition'.[2] This word appeared in English language as a translation of Latin word 'Qualitas' coined by Cicero to translate the Greek word 'Poiotes', itself coined by the great philosopher Plato. The ordinary use of this word is synonymous of 'property'or characterstic'.[3] The word is often employed in good sense to express qualities of character.

'Quality Service' in its business sense refers "to improve customer perceptions of the quality of products".[4] This means that a particular organisation would have to improve the actual quality of its products and also its relationship with the customers. Thus, it will have better understanding of the needs and expectations of the customers. One has to see quality as a way of achieving a successful business and sustaining customer service.[5]

In case of library, the products are the services given to the users (customers). The objective of the library is to satisfy the needs of its users through various services given to them. These services, of course, will have to be 'quality services' which should reflect the qualitative image of the library.

3. QUALITY SERVICES IN LIBRARIES

Research on quality of services in libraries has been reported by many researchers like Sweeny *et al.* (1992),[6] Herbert (1994),[7] Edwards and Browne (1995),[8] Nitecki (1996)[9] and Dow (1998).[10] A number of surveys have been conducted by these and other researchers in various parts of the world, but the literature pertaining to quality service in Indian libraries is rarely available. Banwet and Dutta (2000)[11] have recently studied the effect of service quality on post-visit intention in the library of Indian Institute of Technology, New Delhi. They have found that services provided by the library in this institute are generally matching the users' expectations. In their survey, the students have rated 'Reliability' as the most important dimension of service

quality, whereas the other parameters like 'Equipment', 'Physical Facilities', 'Availability of Staff', 'Responsiveness', 'Assurance' and 'Empathy' come next to it. They have concluded that consumer satisfaction mediates the path between service quality and post-visit intensions. The library managers must strive towards satisfying their users in order to ensure that users not only continue using the library but advise others to use it.

4. TRADITIONAL SERVICES IN ACADEMIC LIBRARIES

Library services in academic libraries in the 20th century have been fragmented due to the under-funding of libraries by various agencies. College and university libraries usually get grant from their parent organisations and the State/Central governments. The school libraries get very small grants from the State Governments. That is why the collection in a school library is negligible. In college and university libraries, following type of traditional services are being provided:

4.1 Catalogue Based Services

These services include the provision of catalogue of books and other reading material, sharing of catalogues with other libraries and the union catalogues of books and journals also make part of these services. On-line Public Access Catalogues (OPACs) have also been made available in some cases towards in the end of 20th century.

4.2 Document Supply Services

It includes inter-library loan *i.e.* lending and borrowing of books and other reading material to and from other libraries. Also, document delivery through photocopies, fax, e-mail and Internet form part of this service.

4.3 Communication based Services

These services includes referral services. Sometimes a library may not be able to provide the required document/information to a user. In such a situation, it can guide the reader to another library or place where the particular document/information is available. It also includes optical fibre technology for speedy communication of information. e-mail and Electronic Bulletin Boards (EBB) also form this type of service.

4.4 Media Library Services

Due to financial or technical constraints, some libraries might not have been able to build up their collection of audio and video material such as audio cassettes, video cassettes, films and CDs etc. They may not have got the necessary hardware to run this type of material. A university library is expected to have such material with it for the use of its clients including research workers in different fields of research.

4.5 Database Services

University libraries offer database services based on their own collection or through the on-line access to the international databases with help of on-line computer and the Internet. This service became popular during the last one or two decades of the 20th century. Networking will further change the organisational structure of the libraries in the 21st century.

5. TECHNOLOGY AND THE ACADEMIC LIBRARIES

The most revolutionary technology for spreading the information world wide was the printing technology invented by Gutenberg in the fifteenth century. It facilitated the dissemination of knowledge easily throughout the world. The production of books led to spread of literacy to a large extent.

Information Technology (IT) is the most important technology of the 20th Century bringing out revolution in spreading the information globally. The developments in the electronic information systems have influenced the libraries in a big way. The IT covers the following technologies relating to the libraries.[12]

5.1 Computer Technology

It covers computerised database organisation and management of the reading material in libraries. Library management operations and services are also becoming part of this technology nowadays.

5.2 Communication Technology

It deals with the transmission of information in the form of signals. Library networking and other information networks connected on-line through satellite technology, are included in this technology.

5.3 Reprographic Technologies

It deals with photography, photocopying, microfilming, etc. This technology has made a big impact in the document delivery in the libraries.

5.4 Library Technology

It covers in-house operations of the library such as, abstracting, classification, cataloguing services, etc. Resource sharing and networking, indexing, databases creation, circulation, CAS and SDI services etc. are also a part of this technology.

6. INTERNET AS A NEW GLOBAL LIBRARY

The marvelous development that has taken place for the universalisation of knowledge is the electronic handling of information and its storage in the computer memory and its transmission, retrieval and conversion into sensory material over the telecommunication network.[13] Networking of computers at local, national and the global levels has brought the world further closer. Internet, apart from various other purposes it serves, is becoming a vast library in itself as the storehouse of continuously increasing and updating knowledge. It enables access to various websites available throughout the world. The happy news for us is that optical fibre transmission systems are providing brandwidth of information at lower prices. The traditional telephone network is being transformed into a global information highway system as the telephone networks of all the countries are inter-connected and calls can be made from anywhere to anybody. The capacity of this global information is ever expanding because of new technologies, mainly of fibre optics and communication satellites as discussed earlier. It has led to a qualitative change in the communication and information technology. The worldwide sale of PCs is more than any other information terminal. For example, in 1998, more than 100 million PCs were sold as compared to about 80 million mobile phones and about 60 million wired telephones.[14]

7. LIBRARIES IN THE 21ST CENTURY

It is generally said that future libraries will have collection in multiple media and their activities and services will be fully automated. However, the extent of the use of these facilities and systems will vary

with the libraries in 21st century. Philip Barker, Professor of Applied Computing and Research and Director at the University of Teeside, visualises the following categories of future libraries:[15]

7.1 Polymedia Libraries

Also known as multimedia libraries, these are libraries with collection in several independent media like paper, microfilms, other microforms, multimedia, CDs etc. and the organisational and the managerial processes within these libraries will be largely manual.

7.2 Electronic Libraries

These libraries will have widespread use of computers and networked information and other facilities such as on-line databases and automated record-keeping and computer based decision-making.

7.3 Digital Libraries

In these libraries all information will exist only in a digital electronic format. The information itself may, however, reside on different storage media such as electronic memory of magnetic or optical disks, but users will not necessarily find any difference between them, as they are interested in information only.

7.4 Virtual Libraries

These libraries will use the technology of Virtual Reality (VR). This is known as 'telepresence' in its simplest form. In a virtual environment, one would be able to browse around a library system without physically going to it.

8. PARADIGM SHIFT FROM DOCUMENT DELIVERY TO INFORMATION PROVISION

In 21st century the paradigm is shifting from 'providing the document' to the user in a library to the providing of actual information to him. In future, the library professionals will be working as the Information Managers and Information Providers. The use of IT in the next millennium is reflected clearly in the vision of the policy document entitled, "Strategic Agenda for the Ottawa Public Library" (Published in June 1996). It says:

"The paradigm is shifting. Our world is increasingly built on

information. Libraries will be electronic doorways to information. Library workers of the future will be the navigators, the facilitators and the mediators of the digital revolution. They will help people retrieve, organise or develop the information, they need. Library workers will be comfortable with computers, networks and databases as they are with books, tapes and story-times. They will need to train and retrain constantly."[16]

9. CHALLENGES BEFORE FUTURE ACADEMIC LIBRARIES

Challenges of change in the future academic libraries are in no matter different from the other challenges in the field of health, insurance, banking, telecommunication, public transport etc. The present day Indian libraries are unable to maintain their acquisition and services even at the existing level with the finances made available to them by State and Central agencies, which have been cut down or remained static for years together. A major part of state grants goes to the staff salaries and it becomes difficult for the libraries to cope with the growth on acquisition of the reading material.[17] It is the practical observation that 60–70 per cent of the total budget available in the university libraries is being spent on the staff salaries and only 30–40 per cent is left for the purchase of reading material in the library. It may be even less than that in some cases.

There is a great necessity of funds for the acquisition of new technology in order to enhance the services in the library and their outputs. There is also a threat from the competitors to maintain quality services in face of market economy, public funded institutions and commercial organisations.

Main challenges before the academic libraries in 21st century will be:

- to exploit resources properly and to use them effectively,
- to mobilise resources and to meet the financial demands,
- to make services and products qualitative and competitive through accountability,
- to make Use of the new technologies effectively to the satisfaction of the users, and
- to provide information to the future users available through various electronic services.

10. QUALITY AND SUSTAINABLE LIBRARY AND INFORMATION SERVICES

Qualitative services from the library and information centres will be the demand of the future users. Nowadays, the whole concept of quality has changed. The shift is from 'provider oriented' to 'customer oriented'. Quality is the only driving force of the entire activity cycle from the beginning to the end. The concept of 'Total Quality Management' (TQM) is gaining popularity these days and will be the goal for library services in future.

For implementation of TQM in library and information centres, changes in the attitude of professionals towards their work is required. Support from top management is must for this purpose. Professionals should have autonomy to work on their own initiative. They should be able to use their capabilities and intelligence. It will ensure the improvement in the quality of service.[18] The developed countries are now emphasising on 'Continuous Professional Development' (CPD) and 'Total Quality Management' (TQM). We are yet much behind them in this respect. In order to achieve TQM in library and information services, it is essential to have a new brand of information professionals equipped with a variety of new skills and knowledge. There are two types of efforts required to improve quality in the library and information services.[19] These are:

10.1 Evaluation Studies

It requires the evaluation of existing library and information products and services to evolve new standards of performance and yardsticks for efficiency of information retrieval systems, databases and networks.

10.2 Value-added Models

Value-added models have evolved methods for improving the quality of information from the stage of data to information and knowledge.

11. INFLIBNET AND THE ACADEMIC LIBRARIES

Much publicised INFLIBNET programme was started by the U.G.C. in the early 1990s in order to improve the services in libraries of universities and selected colleges. The computerisation of these

libraries was the major part of this programme. Liberal grants were given to the participating libraries in one or two instalments to acquire the necessary hardware and software. Training programmes were also conducted to train the selected library and computer science professionals. The participating libraries of INFLIBNET are now busy in computerising their collections. Some of them have achieved a reasonable success in this direction while others are trying hard to do so. The computerisation of the resources available in these libraries will help in the networking of the academic libraries at national and global levels.

12. PRINT MEDIA VS. ELECTRONIC MEDIA IN THE 21ST CENTURY

When F.W. Lancaster sounded his forecast of "Paperless Library" in the late 1970's, it was regarded as a revolutionary idea in the field of library and information science. To some it appeared that everything will be available in the electronic form and the paper form will disappear by the end of 20th century. According to them, the paper-print media may completely go away in the 21st century. Many enthusiasts of IT still emphasise that the future libraries will have no paper documents and no walls and, thus, there will be digital, cyber and virtual libraries only. These libraries will provide information services and products as well as the documents through various networks. However, many library personnel and managers are aware that paper editions of publications will not disappear from libraries, rather they will increase, as many literary works will not be in the electronic form in the 21st century. The literature in science and technology is now coming in this form and will be available mostly in the electronic form in the 21st century. The other subjects in social sciences, humanities and the literary works will be largely available in the print form. In some of the cases, these may be available in both the forms. Dr. S.S. Murthy, former Director, DESIDOC, New Delhi, puts it as, "All is not all-rosy with the electronic or digital publications and with the cyber or networked libraries".[21]

Colin Johnston, an on-line librarian, while bringing out some of the problems faced in libraries with the use of digital collection including CD-ROM and Digital Video Discs (DVD) and Internet based access to publication says:

> "Paper based publications provide far more comfortable reading, when one has to read continuously and in comfortable postures (in easy chairs, sofas, beds, etc.) than any electronic or digital publication. So, the libraries designed with a view to accommodate more digital collections and expectedly fast decreasing paper-based collection will have problems in finding space for the paper-based collection".[22]

A survey published in the journal, *Computers in Libraries* in 1995 found that the librarians usually took less time to provide information from library collection than from the Internet.[23]

A paper published in the journal, *Communities of the ACM* also advises, "If you are in a hurry, go to the library, not to the Internet", as the searching on the Internet takes much time. The Internet has been compared to a large library without a catalogue and whose stock is unclassified and randomly shelved. Under these circumstances, the academicians and researchers even in the advanced countries mostly prefer paper-based scholarly publications and their Internet editions simultaneously, perhaps because of the convenience. Also, a large part of the information available on the Net is not evaluated and authenticated and thus cannot be relied upon and is not quotable for serious use. In such a situation, one may think that Internet may become a vehicle for disinformation also.[24] This does not mean that Internet is not useful for accessing information, but its contribution should not be over-emphasised.

If Internet is to be used by librarians of 21st century, a number of steps will have to be taken to make it a useful tool for the required information. For example, catalogues could be developed for the materials available on the Internet for its maximum use in minimum time. At present, more than 1000 library catalogues are available on the Internet.[25] Then getting a book after it is located from such a catalogue would not be so easy. Here, the traditional inter-library cooperation has still to help the document supply, although several document delivery services are provided by some vendors also.

13. CONCLUSION

The academic libraries in the 21st century will have many resources available with them in the electronic form which will be the dominating media in future as the Information Technology (IT) is changing

the scenario of library and information services throughout the world. These information services will be available in the electronic and digital libraries. The Internet is going to serve as a big "global library", of course, "but, without a catalogue", in the 21st century. It is beyond any doubt that electronic media will be the main media of information in the 21st century, but the role of print -media of information in this century, cannot be undermined. Much literature will be available in both forms, but still a significant portion of this will be there in printed form only. Thus, the importance of printed literature cannot be and will not be ignored in the 21st century. Quality services from the library and information centres will be the main demand of the future clientele. The whole concept of quality is changing now. The shift is from 'provider oriented' to 'customer oriented'. Quality is now the major demand in each and every field. The concept of TQM is gaining popularity in every sphere of life and the library services are not behind in this respect. Quality in the library services can be built and maintained only through the continued improvement process. For implementation of TQM in library and information services, change in the attitude of library professionals is must, of course, the role of top management in acquiring this TQM is the foremost. The professionals will have to be trained and retrained at certain intervals. Continued Professional Development (CPD) is the key to achieve TQM in the library and information services.

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Quality-is-Personal (QIP)—Test: Quality Consciousness-Test for the Library Personnel

JUIN DUTTA

ABSTRACT

The paper is a part of the study carried out to enquire about the Total Quality Management culture in Smt. Hansa Mehta Library, central library of the university library system of M.S. University of Baroda. The paper depicts the methodology and findings of one of the principal objectives of the aforesaid study, that is, 'to find out the quality-consciousness of the library personnel'. Analysis is based on Quality-is-Personal Test (QIP Test) which was tailor-made specifically for library personnel from the theories of Claus Moller, Harry Robert and Bernerd Sergeskette's QIP Interactive (Business Today, 1995). The sample taken were Assistant Librarians, Sectional Heads and Technical Assistants who are the decision-makers of the library. Rating of QIP Test was done by analysing the answers given by the sample population in the 'QIP-Test' questionnaire. The paper suggests the strategies to enhance the quality-consciousness of the employees keeping in view the rapidly changing scenario of the libraries.

1. INTRODUCTION

Right from the beginning of the human civilisation the strife for improvement in every sphere of life was present. The discoveries, inventions and innovations in different fields have been taking place due to man's continuous experiment with life to make it more convenient. The question of 'quality' thus emerged. With the phenomenon like globalisation, immense consmerism, cut-throat competition in different sectors of the economy, no country can afford to sustain with poor quality. Quality in products and quality in services are the

principal objectives of today's industries. To reinforce and to sustain the good quality in products and services, the most important factor which acts as fundamental to the quality-improvement-move, is quality consciousness of the personnel of the organisation.

The present paper is the part of the study[1] carried out to enquire the total quality management (TQM) culture in Smt. Hansa Mehta Library, the central library of the M.S. University Library System. One of the principal objectives of the aforesaid study was to find out the quality consciousness of the library personnel.

2. WHY PERSONAL QUALITIES ARE IMPORTANT?

Moller, Sergesketter and Roberts identify that 'personal quality is the starting point of total quality'. They insist that 'managers set personal quality accounts, finish, what they start, be ethical and avoid mistakes—the five ingredients for a personal quality agenda'.[2] It is needless to say that personnel of any organisation are the most important part of it and to achieve a standard quality in products and service, to sustain it and to improve it continuously, their quality consciousness has to reach to a certain level. Modern machineries and adequate funds are not sufficient for the development of the organisation if the personnel are not adequately quality conscious.

In libraries, quality most importantly means the quality in services. A good store-house of books or information source becomes a good disseminator of informations if and only if the personnel provide a clientele-oriented service. Otherwise, it will be a store-house of knowledge with a great monumental value even with modern technological facilities.

3. THE PRESENT STUDY: SMT. HANSA MEHTA LIBRARY

Smt. Hansa Mehta Library was set up as the central library of Maharaja Sayajirao University Library System in 1950. Smt. Hansa Mehta Library serves the third-year graduation students, post-graduate students and research scholars whereas, first and second year students use Sir Sayajirao Memorial Trust (SSMT) Library which is the extension of Smt. Hansa Mehta Library. The other libraries of the university library system are as follows:

(*i*) Centre for Advanced Study in Education (CASE) Library,

(*ii*) Faculty of Fine Arts Library,
(*iii*) M.K. Amin Arts & Science College and College of Commerce Library (Pandra);
(*iv*) Faculty of Management Studies Library;
(*v*) Oriental Institute Library;
(*vi*) Polytechnic Library;
(*vii*) Faculty of Social Work Library;
(*viii*) Baroda Sanskrit Mahavidyalaya Library;
(*ix*) Prof. T.K. Gajjar Library;
(*x*) Water Resources & Management Institute Library;
(*xi*) Faculty of Performing Arts Library.

The study considered the Assistant Librarians, Sectional Heads and Technical Assistants of Smt. Hansa Mehta Library only.

4. METHODOLOGY

The present study was carried out with the help of 'Quality is personal interactive'. (QIP Test) which was based on the theories of Claus Moller, Harry Robert and Bernad Sergesketter.[3] The question-set were tailor-made according to the library environment, whereas the structure of the questionnaire remained the same.

The question of QIP Test were based on three fundamental categories *e.g.*

(*i*) Personal organisation,
(*ii*) Personal management and
(*iii*) Personal behaviour (Appendix I). Questions were set on 1-5 rating scale where 1 meant never, 2 meant seldom, 3 meant occasionally, 4 meant usually and 5 meant always. Simple additions of the ratings gave the total ratings and quality consciousness of the personnel was found from the total ratings.

5. SAMPLE

The sample selected for the present study were Assistant Librarians, Sectional Heads and Technical Assistants of Smt. Hansa Mehta Library. The selction of the sample was restricted to professionally qualified personnel in the library. The number of personnel from whom data were collected is tabulated below.

Table 1: Number of Employees from Whom Data were Collected

Assistant Librarians			*Sectional Heads*		
No. to whom qn. Given	Ans. Recd.	%age	No. to whom qn. Given	Ans. Recd.	% age
3	2	66.66%	7	6	85%

Technical Assistants		
No. to whom qn. Given	*Ans. Recd*	*%age*
3	3	100%

6. ANALYSIS

Personal organisation, personal management and personal behaviour were considered as the indicators of quality consciousness of the personnel. The analysis was based on the following criteria.

2-40 indicated poor quality consciousness
41-80 indicated moderate quality consciousness
81-105 indicated high quality consciousness

Table 2: Analysis of QIP Test

Score	*No. of employees*	*%*	*Remarks*
2-40	None	0	Moderate
41-80	5	45%	High quality
81-105	6	55%	Consciousness

The analysis of the present data showed that 45% of employees scored between 41-80 and 55% of employees scored between 81-105. (Table 2).

The data are further analysed with the three indicators *e.g.* personal organisation, personal management and personal behaviour (Table 3).

Table 3: Categorical Analysis of QIP Test

Categories	*Score*	*Asst. Libn.*	*Sect. Head*	*Tech. Asst.*
1. Personal Organisation				
	20-30	X	3	1
	31-40	2	3	2
2. Personal management				
	20-30	X	2	1
	31-40	2	4	2
3. Personal behaviour				
	10-15	1	2	1
	16-20	X	2	2
	21-25	1	2	X

Categorical analysis (Table 3) shows that the scores for the 'personal organisation' are higher for two Assistant Librarians, three Sectional Heads and two Technical Assistants. But three Sectional Heads and one Technical Assistant have scored moderately. This clearly indicates that the lack of ability to organise oneself may affect the organisation of the sections and the library as a whole. As a result the unorganised sections will not be able to provide better service to the users. The scores for 'personal management' are high for Assistant Librarians, and most of the Sectional Heads and Technical Assistants. Still there are two Sectional Heads and one Technical Assistant whose personal management scores are moderate. As far as 'Personal Behaviour' is concerned, only one Assistant Librarian and two Sectional Heads are on the higher side of the score. Qualitative analysis shows that most of the employees are not concerned about their behaviour with the users and the colleagues. They may not realise the importance of personal behaviour in a service organisation. Undoubtedly it can be ascertained that in libraries, where employees frequently interact with the users, the personal behaviour matters a lot. The users find it easier to use the library if the personnel are courteous. Their cordial behaviour make the users use the library—the source of knowledge, in more exhaustive way. Good behaviour from the personnel is

the most desirable thing to satisfy the clientele and to delight them as well.

The type of the questions and the rating system are such that one may question the validity of the real picture. One may think that there is every chance of getting a rhetoric picture from the types of questions given in QIP Test; but the fundamental trust towards the employees which is the basic principle of total quality culture should not be forgotten. The answers given by the employees for themselves should be considered valid and honest

7. THE JOURNEY AHEAD: TOTAL QUALITY

The quality consciousness of the personnel in any organisation may be considered as the key concept for the total quality approach. The continuous improvement, customer satisfaction and the customer delight are the stepping stones in the journey of total quality. Library being a non-profit service organisation, its development solely depends upon how it handles users' perceptions and their needs. With the information explosion at hand, one has to accept that users needs are changing very rapidly. Today's users want pin-pointed, exhaustive, exact information as soon as possible. The changing environment repeatedly reminds Ranganathan's fourth law *i.e.* 'save the time of the users'. To tackle this situation the dire need is to improve self management of the employees which in turn will make the organisation responsive to the changing needs of the clientele. The responsibility of the top management is to make the organisation responsive to its clientele and 'to have a flexible approach within the changing world'.[4]

8. LIBRARY MANAGEMENT'S RESPONSIBILITY

(*i*) The cardinal lesson to be learnt by the management that 'knowledge workers help the organisation leap to the quality era'.[5] The excellence of the organisation's performance depends on how the management treat the people and their productivity.

(*ii*) The management should take the initiative to transcend the organisation to a 'learning organisation' which continuously permeates the change in the demand of the clientele.

(*iii*) There is a need to realise employees' creative potential.

Understanding the creativity and empowering them are the effective ways to make them quality conscious.

9. CONCLUSION

In India, the poor state of the most of the academic libraries is mainly because of the passive attitude of the library personnel. As the ineffectiveness of the academic library personnel does not affect the economy as a whole in monetary terms, it is ignored by the management. The ignorance leads to procrastinated way of handling things. In spite of repeated inconveniences faced by the clientele specially of academic libraries, the discourteous, passive, lethargic and unhelpful attitude of the library personnel continues. To make the employees quality conscious is of immense necessity in today's situation. Though the question of survival does not arise with the academic libraries, because the students generally don't have any alternative choice, but there certainly is the question of academic achievement which directly depends on good library service.

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APPENDIX—I

THE 'QUALITY—IS—PERSONAL' TEST (QIP—TEST)

(For library Personnel)

Name (Optional)	:
Section	:
Designation	:
How long you have been in this Organisation	:

The Method: For each of the questions, assign the score in the following way:

(1) Never (2) Seldom (3) Occasionally
(4) Usually (5) Always

	Nev.	Sel.	Occ.	Usu	Alws
A. Personal Organisation:	1	2	3	4	5
1. Do you make written notes of the things you need to do at the start of every working day?					
2. Do you make it a rule 'never to postpone tasks', however much you may dislike them?					
3. Do you attend to every file or memo on your table within 24 hrs. of its arrival?					
4. Do you respond to all the letters that you receive, within two days and to all the mails marked 'urgent' immediately?					
5. Do you send typed messages instead of handwritten copy?					
6. Do you have fairly clean desk where you can almost always find out things you need?					
7. Do you complete more than 90% of the target set for a given day?					
8. Do you read every morning's news paper the same day either before or after work?					

B. Personal Managment:	1	2	3	4	5
1. Do you meet at least six employees from different departments every day?					
2. Do you always refer to an expert in a particular field when you are considering a major issue?					
3. Do you make it a point to interact with at least one user every week?					
4. Do you set aside some time everyday to read technical journal to enhance you knowledge?					
5. Do you give your associates and fellow employees advance notice before leaving town?					
6. Do you delegate routine activities when leaving town?					
7. Do you respect hierarchy when communicating with your colleagues?					
8. Do you pay attention to the small queries from the users?					

	Nev.	Sel.	Occ.	Usu	Alws
C. Personal Behaviour:	1	2	3	4	5
1. When you are irritated, do you make an effort not to make it obvious in the way you speak or behave?					
2. Do you make it a rule not to blame someone else when something goes wrong?					
3. Are you, no matter when the provocation, polite to your colleagues and sub-ordinates?					
4. Do you treat your users with the same courtesy and consideration that extend to your superior?					
5. Do you listen to others attentively even if you do not agree with them?					

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Total Quality Management in Collection Development: An Experience

S.P. SATARKAR AND JAGDISH N. KULKARNI

ABSTRACT

In addition to discussing the principles of collection development, procedures and problems related to acquisition, the article brings out a case study of Library of the Swami Ramanand Tirath Marathwada University; Nanded on the merits and demerits of qualitative collection development procedures.

1. INTRODUCTION

The main objective of a library is to provide information and knowledge to users. A comprehensive, balanced and updated collection of documents is an essential activity of the library. The development of quality collection of a library is not an easy task. There are millions of documents that are available for building a collection. There is always a necessity for a library to be selective because of many constraints such as funds, space, extents of use, user's needs etc. These factors determine the practice of collection building. The procedure in acquisition of documents also affects the building up of collection. Principles and procedure are the major factors to be considered while discussing the total quality management in collection development.

2. SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY LIBRARY

Swami Ramanand Teerth Marathwada University was established on 17th September 1994 at Nanded in the eastern part of Maharasthra. In

the beginning university library had a collection of 5600 books, as it was a sub-center of the earstwhile Marathwada University. With the establishment of this university, the collection of the sub-center became part and parcel of the new library. University library formulated the principles and procedures from its inception and the terms and conditions of supply were decided.

3. PRINCIPLES OF COLLECTION DEVELOPMENT

Principles of collection development are also called as principles of document selection. The type of library is an important factor in selection of documents. Budget, manpower, space etc. are also major factors that influence selection. An adequate knowledge about the information needs of the users and about the documents and their contents is also essential. The philosophers in library profession Durry, Dewey, McColvins and Ranganathan have discussed the principles in various manners. Dewey states that "The best reading for the largest number at the least cost". Durry stated the principles of selection in detail and in depth. These principles are not only applicable to books but also equally applicable to all types of documents.

(*i*) Study open-mindedly the community, endeavoring to analyse its desires, diagnose its ailments, provide for its wants and satisfy its needs.

(*ii*) Provide for both actual and potential users. Satisfy formers' general and specific demands as far as possible; anticipate the demands, which might or should come from the latter.

(*iii*) Enact suitable standards for judging all books and strive to accommodate them.

(*iv*) Apply criteria intelligently and evaluate contents for inherent worth.

(*v*) Purvey for recognised groups, reflecting every class, trade, employment or recreation, which develops a natural interest.

(*vi*) Be willing to buy, as far as funds permit, the works asked for by specialists and community leaders.

(*vii*) Select books that represent any endeavour aiming at human development material, mental or moral.

(*viii*) Do not strive for completeness in sets, series, or subjects unless convinced that it is necessary.

(*ix*) Restrain the unduly aggressive patron but recognise the inarticulate one.

(*x*) Aim at getting the best on any subject, but do hesitate to install a mediocre book that will be read in preference to a superior one that will not be read.

(*xi*) Stock the classics and the standard works in attractive editions.

(*xii*) Duplicate the best rather than acquire the many.

(*xiii*) Select for positive use. A book should not simply be good, but good for something. It must do service.

(*xiv*) Develop the local history collection; its items will be sought for in the library.

(*xv*) Refrain from bias—personal, literacy, economic, political, or religious and select with tolerance and without prejudice.

(*xvi*) Do not be intolerant of fiction if it measures up to standard. It has educational as well as recreational value and is now the dominant form of creative art.

(*xvii*) Buy volumes which are suitable for the library purpose in format as well as in contents and are attractive and durable in binding, paper, and printing.

(*xviii*) Get to know the publishers, their output and specialities; the authors, their works and their ranking; and the costs. In short get to know everything about books.

(*xix*) Manage resources through cooperation with local, regional and national organisations.

(*xx*) Discard or refrain from adding books (other than the classics and standards) for which there is not actual or anticipated demand.

(*xxi*) Keep within the budget, knowing the total amount available and maintaining a just proportion in allotments.

These principles can be considered as principles of selection with variation as per local library needs.

4. ACQUISITION PROCEDURE

Each library adopts different procedure for acquisition of documents. Common modes of acquisition of documents can be summarised as below:

(*i*) Purchase
(*ii*) Gift or donations
(*iii*) Institutional membership
(*iv*) Deposit system
(*v*) Exchange.

Bulk of library acquisitions are made by purchase. In purchase, firstly, one has to select the supplier. Selection of the supplier is one of the most crucial matters. The methods applied for selection of the supplier and ordering are as follows:

(*i*) Inquiry/Tender method
(*ii*) Quotation method
(*iii*) Standing vendor method
(*iv*) Books on approval method
(*v*) Direct ordering with publishers.

Secondly, library has to decide the terms and conditions of supply. This should includes items like trade discount, conversion rates of foreign currencies and other conditions like authority of dealership, price proofs etc.

Purchase of publications is easy in metropolitan cities. The reason being that many publishers are having their offices/distributors in these cities. Required book can be made available within couple of hours on a telephonic call. Book exhibitions are arranged or a book selector can frequently visit the bookshops. These situations are not available in district or taluka places. The distances of Nanded city from other metropolitan citires are: Mumbai 525 Km., Pune 340 Km., Hyderabad 286 Km., Nagpur 330 Km. It becomes difficult to contact the distributor or agent for supply of the required documents. Further, the university is having non-traditional courses like astrophysics, seismology, industrial chemistry or biotechnology. Hence building of collection of useful sources of information is a tedious job.

Swami Rananand Teerth Marathwada University library has made efforts for achieving economy and transparency in purchase of documents. As this is a university library it has to cater to needs of the teachers, students and researchers. Library has made some progress in sorting out the problems and finding the solutions to overcome it.

5. PROBLEMS IN ACQUIRING BOOKS

(*i*) The documents of renowned publishers are not available in a the place like Nanded.

(*ii*) Due to the growth of knowledge demand for documents in specialised branch of knowledge is growing fast.

(*iii*) Budget available for the library is never sufficient to meet user demands.

(*iv*) As the specific documents are available only with specific agents, it is not possible to call quotations or tenders for each item.

(*v*) Cost of each document is so high, especially in science subjects, that it becomes difficult to select a document without its personal perusal.

To overcome the above difficulties the library has developed a purchase procedure, which is as follows:

(*i*) Instead of calling quotations for each item, the rates of discount are decided by the library committee, which remain applicable throughout the year. Any bookseller can supply the required document at the approved discount rates.

(*ii*) While deciding the rates of discount, the books which are old *i.e.* published before ten years are purchased at higher discount of 30 per cent.

(*iii*) Reference books and multi-volumes set are costly and have good margin of discount for booksellers hence are purchased at 20 per cent discount.

(*iv*) Books published within last ten years are purchased at 10 per cent discount as proposed by G.O.C. and U.G.C. This has resulted in getting latest books to the users.

6. PURCHASE PROCEDURE

Books are purchased by two methods.

(*a*) Approval

(*b*) Direct order

(a) Approval

(*i*) Books are purchased mostly by going through its contents not

only by the concerned head of the school but also by all other faculty members. For this purpose the booksellers deposit the books in the library for approval. Each book is marked with code number. After getting the books from five to six booksellers, faculty members are invited to the library at their convenience for selection. As the books are from various booksellers and booksellers are not present at the time of selection, the faculty members can go through them leisurely and without hesitation.

(*ii*) As the university is having "school" concept, each faculty member in a school is having different area of specialisation. Because of this situation all faculty members are involved in selection of documents instead of only heads.

(*iii*) Books selected by the faculty members are taken out, list is prepared and recommendations for purchase are obtained from the concerned head.

(*iv*) For the books covering the subjects other than those available in the campus, librarian goes through them and takes decision about their purchase.

(*v*) Duplication of the selection is checked and if copy is available, the book is deleted from the list.

(*vi*) Concerned bookseller is informed about the result of selection and to send the invoice with approved terms and conditions.

(*vii*) If a particular book is brought on approval by two booksellers and is selected, the bookseller who brought it first gets the other strictly.

(*viii*) The unselected books are returned to the bookseller without delay.

(*ix*) All this procedure takes hardly one month's time for its completion.

(*b*) Direct Order

If a list of required documents is received from the Head of a school, the procedure adopted is as follows:

(*i*) The list is checked for duplication and available titles are deleted.

(*ii*) Ten to twelve copies of the list are prepared with complete details like author, title and publisher.

(*iii*) These lists are mailed to different suppliers from various places throughout the country.

(*iv*) The suppliers are asked to inform availability and cost of the books.

(*v*) The booksellers, who informs availability along with lowest cost first, will get the order.

(*vi*) If the cost of the book selected is more than the available budget the concerned head is asked to divide list in to first/second priority so that most useful documents can be ordered first.

7. RESULTS OF LAST THREE YEARS

The results of the adoption of this procedure in the university library can be summarised as below:

Description	*1997-98*	*1998-99*	*1999-2000*
No. of books received on approval	12405	9842	10512
No. of books selected	3953	1358	1736
Amount spent (in Rs.)	29,99,235	18,61,419	13,89,294
No. of vendors	99	110	121

8. MERITS

(*i*) This procedure saved time and energy of the faculty members as well as booksellers.

(*ii*) University gets more discounts with proper justification for increased rate. Very few booksellers have denied giving discount at increased rate. In such case if the document is needed it can be purchased at lower discounts and the library committee has empowered librarian to take decision in such case.

(*iii*) Booksellers will not have to contact each head of the school for obtaining the recommendations and to wait till the selection is completed.

(*iv*) All the faculty members can go through the books at their leisure.

(*v*) Duplication, budget provisions can be checked correctly.

(*vi*) Booksellers from the various places have deposited thousands of books each year. The faculty members were able to see the contents of these documents in Nanded itself, which shows the success of the procedure.

9. LIMITATIONS

This procedure has increased the workload of the staff of the library as they have to:

- receive larger number of books from the booksellers,
- allot code number to each book,
- enter in a register,
- keep them in safe custody,
- sort out and arrange them as per the subject,
- request the faculty members for selection, and
- return the documents to the concerned bookseller.

The procedure is transparent, useful and reliable. It also helps booksellers to increase their efficiency as the one who deposits document first gets benefit.

After considering the merits and demerits of above procedure a dream of total quality management in collection development can be achieved.

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Urge for Quality in Public Libraries of West Bengal

AMIT KUMAR BANDYOPADHYAY

ABSTRACT

The paper makes a survey of the present predicament faced by the librarians of public libraries in terms of dwindling number of readers, lack of financial support, absence of clear cut policies towards their development and above all the falling standards of the services being provided there. The contributor suggests some measures to save this public utility from disuse through steps to induct quality standards in their working, services and management.

1. INTRODUCTION

The Burdwan District Branch of the Bengali Library Association observed the last Ranganathan anniversary by holding a one-day Seminar on the "Problem of Readers in Public Libraries". The theme of the Seminar was actually 'the problem of decreasing number of readers in public libraries' or in other words 'the problem of getting readers in the public libraries' The aggression of television channels and the lack of reading habit were identified to be the main concerns. Some of the speakers raised the question, 'why the readers will come, if their need/purpose are not served/fulfilled by the libraries?' More than twenty years have passed since the Library Act was enforced in West Bengal. Number of sponsored public libraries has increased. The library staff are now getting a moderate salary package. Book grants have been enhanced. But the over all picture of public library service in the state is still not that satisfactory, which is clear from the very topic of the seminar mentioned above.

2. LIBRARY USERS'/NON-USERS' OPINION

Few years back, a survey was conducted under my supervision[1] among some users and non-users of libraries of a district town named Suri, endowed with seven libraries (one district library, one town library two primary unit libraries and three non-sponsored libraries) within less than four square miles. Among the fifty non-users surveyed, 34% mentioned having no reading habit, 77% of them assigned the cause to lack of facilities. 28% showed disinterest towards library and 10% mentioned their ignorance about library facilities; 46% mentioned that time is the factor for not becoming library member. Another 16% mentioned distance as the factor of non-use; 62% of these persons mentioned that they want to be a library member.

Among the fifty users of these libraries who were also covered in the survey, 30% said that, they were using the libraries for text books; 40% of the users mentioned that the library hours were not convenient to them; 20% mentioned that they get no chairs to sit while visiting the reading room; 48% mentioned that the library collection were not adequate; 42% mentioned that the number of journals and newspapers were not adequate; 46% mentioned that they face problem in getting their required books. 66% have mentioned that they get no assistance of staff in catalogue consultation; 72% expected that the library should work as an information centre; 74% of these readers have never participated in any cultural programme organised by the library. A brief statistics of the libraries surveyed is given below:

	DL*	TL*	PUL1*	PUL2	NSL1*	NSL2	YSL3
Books	34,239	6859	2100	3600	50,000	650	400
Members	2979	571	185	560	500	78	35
Daily issue	50	30	20	25	30	10	5
Access	Closed	Closed	Open	Closed	Closed	Open	Open
Separate Children's section	yes	No	No	No	Yes	No	No
Extension Program	yes	No	No	No	Yes	No	Yes

* DL = District Lib. TL = Town Lib. PUL = Primary Unit Lib. NSL = Non-Sponsoed Lfb.

From the above table it is observed that most of the libraries are closed access. They are having no children's section and organise no extension programme. It is quite natural from these statistics that these libraries will fail to develop reading habit and to create enough interest to attract more and more readers.

From the above survey we see that to improve the quality of service of the libraries, we need the following steps:

(2.1)The libraries should be kept open on users' convenient days and times. A public library should not he kept closed on Saturdays and Sundays.

(2.2)Book grants should be increased. All type of books including text books should be kept. Number of journals and newspapers should be increased.

(2.3)Good reading rooms with sufficient sitting accommodations are needed in every library.

(2.4)Adequate reference service and reader assistance should be provided with appropriate staff and documents.

(2.5)Information Service: According to the National Policy on Library and Information System drafted by RRRLF[2] "Every citizen must have the right to obtain the information he needs irrespective of his physical, social and economic condition" Proper utilisation of information can improve the quality of life of citizens. According to CONPOLIS recommendation[3] no.3.2, the main thrust in this area should go to rural public library. A village or a village cluster with an adequate population should have a community library which will also serve as an information centre. Resources of different agencies engaged in the work of public health, adult education, local self government and such others may be pooled to build up this composite centre.

(2.6) Extension programs, specially cultural programs should be organised frequently in the library. Local public should be made involved in these programs. Proper external publicity need be made.

(2.7) A good children's section is a must for every public library. According to the IFLA guidelines for Public Libraries, "Children under fourteen years are likely to constitute at least 25-30% of the population, and can be expected to read more voraciously than adults. These factors need be reflected in

library collection." It is further stated in the same document that "It is in early life that a taste for books and the habit of using libraries and their resources are most easily acquired. The public library has therefore a particular duty to provide special collection and, if possible, separate areas for them. The children's library can then became a lively, stimulating place"

(2.8) More libraries should be established reducing distance between two libraries, so that distance may not be the problem for library use.

3. OPINION OF THE STAFF

In another survey conducted under my supervision,[4] an attempt was made to assess the problems of the public libraries of West Bengal as expressed by the library staff in different Bengal Library Conferences organised by the Bengal Library Association on different occasions. The conference papers and proceedings of discussions published in the conference issues of "Granthagar" were analysed for the purpose.

The number of times that the different problems and demands were presented/discussed are counted as a measure of their depth. details of some demands/problems raised are given below:

Problems of the Public Libraries as Expressed by the Library Staff in Different Bengal Library Conferences

(*Service Aspect*)	1954–63	64–73	74–79	80–86	87–97	Total
Insufficient Staff	–	1	–	–	19	20
Bengali Book Selection Tools	–	–	–	2	16	18
Stock Maintenance & Preservation	–	–	–	5	13	18
Problems in Rendering service Code of Conduct	3	1	–	3	9	16

(Late Attendance, Unwillingness to Work etc. are sole identified problems)

Contd.

(*Service Aspect*)	1954–63	64–73	74–79	80–86	87–97	Total
Neo-Literate's Service	–	–	–	–	10	10
Children's Service	–	–	–	–	6	6
Salary on last day of every month	1	2	–	3	30	36
Service Book, P.F. & Group Insurance	–	–	–	1	32	33
Facility for Higher Education	2	–	–	1	18	20
Promotion	–	–	–	–	14	14
Leave sanction	–	–	–	–	13	13
Relation with Staff and Committee Members	–	–	–	1	10	11
Management problems	–	1	–	1	6	8
TA & DA for attending Conferences	–	–	–	–	7	7

3.1 Shortage of Staff

One of the major problems identified is insufficient staff. In many libraries sanctioned posts or vacancies created by retirement/death are not filled for a long time. In many cases, there is no professional/semi-professional staff at all and the library is run by only one class four staff for a long period.

The existing minimum staff pattern of different categories of libraries is not prepared considering the workload and types of services rendered. Many old libraries are running with extreme shortage of staff.

In a memorandum submitted to the West Bengal Pay Commission, in 1978 the Bengal Library Association[5] demanded for the minimum staff of 20 persons for a District Library, 9 persons for a Town/Sub-division Library and 5 persons for a Rural Library. Now there are respectively 10, 4 and 2 posts in these libraries, many of which are lying vacant for a long period. No quality service can be expected

from the libraries in such a condition. Scientific staffing pattern should be developed.

In such a situation we cannot think of TQM for ISO 9001 for our public libraries but we can surely think of taking some minimum steps for quality improvement.

3.2 Work Culture

Late reporting and lack of work culture are also cited problems under the item, need for a code of conduct. Lack of good relation with staff and committee members, and management problems are also highlighted by some staff. Healthy work culture, management and staff relation need be ensured for quality service. Staff motivation and regular inspection of the libraries are needed.

3.3 Books in Print for Local Language Books

Problem of books in print for local language book selection is mentioned. The State Central Library may publish such a tool on regular intervals. Such tools prepared with complete cataloguing data including classification number and subject headings will solve the problems of classification and cataloguing of regional language books at local Level, save staff time and help to provide quality service in addition to working as a book selection tool.

3.4 Children's Service and Neo-literate's Service

Problems of rendering services, particularly service for neo-literates and children are mentioned. There is little provision for children's service and neo-literate's service in most of the libraries although some books are purchased under these heads as a rule. Proper understanding of the importance of these services and training for organising and making such services popular are needed.

Reading habit can be developed only at the young age. Future readers for the general sections of the libraries can be assured only through services of the children's sections.

3.5 In-service Training and Incentives for Higher Education

To get quality service, in-service training and motivation is very much needed. There is little provision for in-service training. One of the major staff demand is facility for higher education and grant of

TA-DA for attending library conferences. Consequently, in West Bengal no with-pay deputation is given for undergoing professional higher education. Employees seeking higher education apply for no-objection in condition that they will do the higher study taking leave from their own leave account and avail without-pay leave when the quota is exhausted. They may be called back to report for duties at any time within the course, if situation demands. No staff is taken against such leave vacancies and in a two-man library the library is run by the class four staff for one long year. Under such conditions, in many cases, they fail to get the no-objection for higher study unless they are having a very good relation with the higher authority.

There is no direct incentive even after getting the higher degree with such personal efforts.

Provision for regular in-service training and proper encouragement and incentives for higher studies are needed for developing staff qualification and skills.

3.6 Staff Facilities

We can not expect dedicated quality service from the staff unless their basic needs of life like salary on a fixed date of the month, leave sanction on need and assurance of retirement benefits are guaranteed. Otherwise they may, spend a major part of their service time thinking and grudging about their unsolved problems.

It need be mentioned here, that in West Bengal, service conditions of the sponsored library staff have been much improved compared to the pre-act era and they can now compare themselves with government staff and claim equivalent facilities which is a healthy indication. It can be found from the table that all these demands except for salary on 1st of every month have originated only since 1980, that is, after enforcement of Library Act, before which, they could not dream of these facilities.

4. SOME OTHER SUGGESTIONS

4.1 Computer To District Libraries and Telephone to Rural Libraries

As it was proposed in the 40th ILA Conference,[6] RRRLF should initiate a scheme for funding the district libraries to install computers.

Internet facility should be extended to each and every district library. Then the district libraries may easily collect necessary information for rendering valuable information service and the DLs may form a network and communicate among themselves for resource sharing.

Further, all the rural libraries be provided with a telephone for collecting information from the district libraries on need.

4.2 Cooperative Network of Library System

According to the IFLA Guidelines for Public Libraries,[7] the concept underlying a public library system is that, no single service point should stand alone. As per CONPOLI S[3] recommendation (no. 3.10), all the libraries within the State should form part of a network extending from the community library of the village through intermediary levels to the district and to the State Central Library. This State Network should eventually connect at the national level.

The district library will take the leadership in establishing linkages between all other public libraries of the district and work towards resource sharing within the area.

4.3 Mobile Library Service

As per CONPOLIS recommendation (3.5), District libraries and branch libraries should arrange mobile and circulating library services whereever it is necessary and feasible.

4.4 Standard of Service

Standard of service of different categories of libraries should be formulated, keeping in view the present situation of the libraries and achievable goals.

5. CONCLUSION

Our public libraries are suffering from sheer shortage of well-trained staff and there is little provision of regular in-service training. In this situation, we can not think of TQM or ISO 9001 for our public libraries but we can surely think of taking some minimum steps for quality improvement as outlined in this paper.

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Assessment of Quality of Journals for Medical College Libraries in Chennai

MANORAMA SRINATH AND N.C. JAYAMANI

ABSTRACT

The quality of the service provided by a library can be assessed by its collection to a great extent. In a specialised library the measuring unit is not just books but research periodicals. Periodicals are the purveyor's latest information. Hence the major objective of this article is to assess the quality of the journals procured in the medical colleges libraries in Chennai. For this a survey has been conducted for: identifying the list of journals procured by the medical colleges in Chennai, collecting information regarding the budget amount for these periodicals and identifying the most sought periodicals by the doctors. After collecting the above information the findings are drawn to assess the extent of the quality maintained by procuring the most demanded journals and budget amount spent to procure the quality journals.

1. INTRODUCTION

The quality of service provided by a library can be assessed by its collection to a great extent. In a specialised library the measuring unit is not just books but research periodicals. Periodicals are purveyors of latest information. But all the libraries are not fortunate enough to procure all these important sources of information, due to the ever-increasing cost of periodicals, in spite of increasing their budget amount every year. Alternatively, they buy only the most demanded periodicals in the limited budget. Owing to the advanced research activities in the field of medicine, formulae for new medicines are researched and new techniques for pathology and treatment are invented. The

medical colleges are the major users of new drugs and treatment to fight the killer diseases and to prevent common diseases.

In this context the medical college libraries gain more significance and need priority in providing support services to promote and develop research activities than any other general academic institution. How many medical college libraries are in a position to provide most demanded journals and to what extent the information needs of doctors and research scholars in this field are satisfied? These two prying questions triggered this present study.

1.1 Need for this study

So far such a study has not been carried out in the medical college libraries, in Chennai. Hence to fill up this lacuna the present study has been undertaken.

1.2 Objective of the study

The major objective of this study is to assess the quality of the periodicals procured by the medical college libraries in Chennai.

1.3 The Scope of the study

This study includes libraries of the following organisations:

	Abbreviations
1. The Tamil Nadu Dr MGR Medical University*	TN MGR*
2. Sri Rama Chandra Medical College	SRMC
3. Stanley Medical College	SMC
4. Madras Medical College	MMC
5. Kilpauk Medical College	KMC

*(Deemed university)

METHODOLOGY

To fulfil the given objective, the following *modus operandi* is followed:

1. The lists of journals procured by all the five medical college libraries are collected.
2. The amount spent for these periodicals in the recent years (*i.e.* from 1990 to 1998) was collected.

3. The most sought periodicals in each subject by the doctors and research scholars were identified.
4. This information was collected by distributing questionnaires to the medical professionals in the selected medical colleges.

The data collected are presented in the table form for analysis.

2. ANALYSIS

Table 1. Budget Amount Spent and Number of Periodicals Purchased

Year	*TNMGR*		*SRMC*		*SMC*		*MMC*		*KMC*	
	Rs	*No. of Periodicals*	*Rs*	*No. of Periodicals*	*Rs*	*No.of Periodicals*	*Rs*	*No. of Periodicals*	*Rs*	*No. of Periodicals*
1990	1,61,379	32	1,22,402	64	2,72,592	131	6,97,912	164	1,32,334	47
1991	2,21,692	39	4,72,769	125	4,24,404	147	4,20,468	67	1,39,520	28
1992	6,14,240	73	7,15,458	133	6,55,774	150	4,57,112	78	1,52,421	30
1993	4,21,362	74	9,70,076	153	9,01,965	167	4,14,314	65	1,43,921	28
1194	4,67,247	71	6,22,641	133	9,24,357	163	5,74,591	84	0	0
1995	6,26,499	103	6,22641	133	7,31,536	133	12,12,529	118	1,71,385	31
1996	8,44,332	134	9,04,343	156	5,57,676	97	12,67,079	123	2,43,867	28
1997	15,67,869	184	13,08,174	174	2,87,044	47	12,29,842	114	2,65,545	29
1998	26,10,136	200	16,77,027	188	3,37,600	45	16,30,812	117	6,87,390	61

Table 1 shows the budget amount spent for purchasing journals for nine years and the number of periodicals purchased out of the allotted budget in all five libraries.

It is obvious from the table 1 that MGR Medical University Library is spending more amount for the purchase of periodicals. In 1998, Rs 26,10,136 have been spent. But inspite of adding more than 11 lakhs of rupees to the previous year's budget it could add only 16 more periodicals to its collection. Similarly MMC is able to add only three more periodicals in 1998 by increasing previous year's budget allocation by Rupees 4 lakhs.

This proves the high escalation in cost of periodicals and the hardship faced by the organisations in coping up with the price inspite of increase in the budget allocation. TNMGR library is able to allocate more amount and purchase more periodicals than any other

library in 1998. This is probably owing to its status as deemed university, whereas, other libraries are only part of medical colleges.

Table 2. Duplication of Journals

No. of total journals in 5 libraries	*Duplicate*
893	250 (28%)

In the five libraries a total of 893 journals are procured and among these journals (250 journals) 28% are found to be duplicate.

To determine the extent to which the demanded journals are purchased by these libraries, a list of most sought journals was identified and ranked in order of preference.

Table 3. Percentage of Most Sought Periodicals Distributions by Library

TNMGR	71.7%
SRMC	57%
SMC	52%
MMC	48%
KMC	29%

Among the ranked periodicals 131 are found to be international journals and 46 are Indian publications. The above table shows that more than 70% of the most sought periodicals by the professionals are procured in MGR Medical University Library.

3. CONCLUSION

An earlier study has identified more than ten thousand periodicals are important for research in medical field. Practically it is not feasible for any library to procure all of them but it can procure most sought journals to some extent.

The only possible solution for the problem at present is, the libraries should avoid duplication of journals and increase the number of most sought journals in each library. This can be achieved by resource sharing. The quality of service in medical college libraries in

terms of providing latest information from the journals can be achieved only by avoiding duplication and resource sharing.

FUTURE STUDY

On the basis of this study a Ph.D. Programme has been undertaken to design a Virtual Medical Resource Sharing Centre especially for periodical articles.

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Ensuring Quality Management in Marketing and Advertising Libraries

R. VENKATA KESAVAN AND
SHAILESH YAGNIK

ABSTRACT

The paper lays stress on the important quality parameters applied while offering various specialised information services and products to the advertising and marketing industry. Further it throws light on significant problems involved in implementing QM in library and information services. It also touches upon the special skills required for the library and information professionals in order to deal with the marketing and advertising information and to achieve total user satisfaction (TUS). Finally, the paper makes suggestions to use IT (Information Technology) as one of the tools to manage quality in library and information services.

1. BACKGROUND

The marketing and advertising industry (MAI) in India is one of the highly competitive and knowledge based industries. The professionals working in the industry are always in need of high quality information services and products in time. Ensuring quality management (QM) while offering the information products and services to MAI is always a challenging task for the professionals working in the marketing and advertising-libraries (MAL). Quality management is a long-term, never-ending commitment to the improvement of quality and performance.[1] Understanding customer needs and expectations is the first step toward providing quality service.[2] In this paper we have made an attempt to explain quality management activities while

offering library and information services at MICA (Mudra Institute of Communications, Ahmedabad) Library and MAGINDIA (Mudra Adverting Gallerie, India), India's first on-line advertising library. MICA (started 1993) and magindia.com (started September 1999) are not-for-profit centres pioneered by Mudra Communications Ltd, for imparting education and disseminating knowledge to the Indian Advertising and Marketing Industry. While MICA Library primarily caters to the information needs of MICA students, faculty members (besides offering services at national level), magindia.com offers offline as well as on-line information services at national level to the entire Indian Marketing and Advertising Industry.

2. MARKETING AND ADVERTISING INDUSTRY (MAI)

The Rs 10,000 crore Indian MAI, is highly dependent on the Marketing and Advertising Professionals (MAP). The MAI serves as the backbone for Indian Corporate sector by offering total marketing solutions. The MAI offers wide range of services and solutions to the country in the areas of advertising, marketing, market research, media research and planning, public relations, direct marketing, events management, interactive agency services etc. Each one of these is a specialised service within the MAI, and therefore each service agency has a set of specialised professionals working in the industry. The existing competitive environment in the market is compelling the MAI professionals to use high quality information and data to design their marketing and advertising strategies.

3. INFORMATION NEEDS

We should know our users and their needs before we offer any kind of service to them. Like any other profession, different kinds of professionals working in MAI require different kind of information in various situations. The thirst for knowledge is everlasting and need for information is indispensable.[3] The need for information is constantly growing and changing from time to time. The following table details the information requirements of MAI.

Table –1: Information Need Analysis

User Community	*Information Needs*
Advertisers (The Corporate sector, Organisations)	Looking for competitive agencies and their profiles
Advertising agency (As a whole)	Looking for potential clients, their product service details, monitoring of existing clients advertising and marketing needs, competitor information etc.
Client servicing professionals	On clients' advertising needs and problems, what solutions to be given, knowledge on client competitors' products/services, sales and marketing strategy etc.
Creative professionals (Art Directors, Creative Directors, Film Makers, Copywriters, Visualizers etc.) Media planner and Buyers	Creative work and designs, typography, photography, filmmaking, multi-media design tools, creative writing etc. circulation figures, viewership data, media rates, media availability, media channels and strategy, media scheduling etc.
Media houses	Knowledge on competitors, data on potential and existing advertisers, ad spend info, proportional strategy etc.
Marketing and Advertising researchers	Knowledge of the market, market trends, product/service reach, consumer habits and insights, marketing strategy, advertising effectiveness
Academicians /Researchers/ Students	Information related, curriculum, case studies, teaching methodology, advertising and marketing theory and practice, academic research etc.

contd.

User Community	*Information Needs*
Society as consumers	Awareness on various products and services.
Ad Associations/Organisations (Like Ad Clubs, Councils etc.)	Industrial policy, talent recognitions (Awards), industry standards etc.

4. INFORMATION SEEKING BEHAVIOUR OF MAI

Information requirement is not consistent in MAI. Barring few larger agencies most of them do not have a library/information centre on a permanent basis. Secondly, most of the agencies operate from metro cities so they have always space constraint for the library. Thirdly, it has been observed that information needs keep constantly changing correlating with accounts handled by them. Most of the agencies look for information during two major occasions, namely, pitching for new business and releasing new campaigns, which are day-to-day affairs. On most of the occasions the request for information comes to the libraries and information centers at a very short notice. This is mainly because the agencies also get orders from their clients for an advertising solution at the eleventh hour.

As and when the need arises, the MAI accesses information form various information resource centres like, MICA Library, magindia.com, CMIE, federation, chamber of commerce, peer group, business school libraries like IIMs, local information broker and few web based information resource.

5. VITAL INFORMATION SOURCES FOR MAI

MAI Libraries have collection of books, periodicals, directories and other materials. However, these libraries have several special information sources, which are used on a daily basis.

6. QUALITY MANAGEMENT IN LIS TO MAI

As mentioned earlier the MAI needs only high quality information products and services, as the professionals in the industry are knowledge workers and constantly facing competition. It is an important

fact one has to keep in mind that non-availability of quality information in time may result in crores of business loss to the MAI. Similarly, the use of high quality information at the right time will result in winning major businesses within the industry. Information has six parameters like quantity, quality, content, structure and life.[4] QM is an important factor that every library professional should keep in mind while rendering quality information services. In this paper, we are using the MAICS (Marketing and Advertising Information Compilation Service) as a sample to explain how the quality is maintained throughout the information service process. The steps followed to implement quality while offering MAICS are narrated below.

6.1 Sample Service for the MAI

The Service: MAICS
Information Content: Compilation of Competitor Ads and Market Information
User Group: Creative Team and Strategy Team from an Ad Agency
Needed when: The Agencies go for new business pitching as well as releasing new ad campaigns
Medium: Hardcopy/On CD/On-line
Service Type: Fee based

Stage 1: Receiving the Information Request

This is the first step when the library user sends his request. The requests are received (via phone, e-mail, fax, in person) by the library staff.

Quality Parameters: Right communication to the right person.

Quality Guardians: The Information Service Staff or Reference Librarian.

Stage 2: Understating the Request

After receiving the request, the library person analyses the requests. The library staff identifies the product/service category, what is the period to be covered, what are the brands to be covered and what medium (Press Ads, TVCs etc.) to be covered etc. In this step, library staff also needs to understand in which medium the output of compilation (*e.g.* Hardcopy, CD, or On-line Access) to be given to the user. Simultaneously, if the request is not clear or more input is needed from the user, again the library person checks with him. At this stage

the library staff also knows the deadline by which the user needs the information. Having understood the request an estimate will be sent to the user to confirm his request as well as the service charges, which he has to pay.

Quality Parameters: Clear understanding of the users' information need and delivery deadline, and cost of the product.

Quality Guardians: Information Resource Manager or Reference Librarian.

Stage 3: Identifying the Information Sources

With the thorough understating of the request, the concerned library staff immediately uses the reference tools (such like online catalogues, indexes, and other related databases) to search the needed information. Based on the outputs from the search engines and indexes, original sources are located and the relevant information is retrieved (in physical as well as electronic from).

Quality Parameters: Right kind of search strategy matching users' request. Standardised up-to-date reference tools are a must. Updated collection development is important.

Quality Guardians: The Information Service Staff or Reference Librarian.

Stage 4: Verifying the data and Authentication

Once the needed information content is retrieved from various sources, it is thoroughly checked for data validation, relevance, currency, comprehensives, and authenticity of the original source of information etc.

Quality Parameters: Through verification of facts and figures. Reliability of the original sources.

Quality Guardians: Information Manager or *Data Analyst.*

Stage 5: Compiling the Information

Having completed the fourth step the compilation work begins. The final information product will have major section namely ads and market overview compilation. Ads are sorted by date of release and brand name wise. Mostly top 10 brands are covered in each product category (Information sources: Publications, TV Channels, Websites). In case of press ads, compilation of photocopies are made from the

original ads. Simultaneously, an index page is printed from the press ads database covering the details such as, brand name, company name, product/service category, agency name, name of source publication, date of release etc. In case of TVCs compilation, commercials are transferred to VHS tapes and cue sheet is printed with the details such as brand name, company name, product/service category, agency name, name of the source channel, date of release etc.

In case of market overview information the compilation will have the sub sections such as industry overview, major players, market share, marketing strategy, ad spend data etc. (Information sources: Published Reports and Magazines, Press Clippings, secondary sources and websites).

Quality Parameters: Good quality reproduction, perfect sorting of ads based on the output from the computerised databases. Logical information flow and continuity in marker overviews.

Quality Guardians: Information Manager or Reference Librarian. or Data Analyst

Stage 6: Packaging & Delivery of Information

It is a fact that you can't sell a product without nice packing. The same is applicable to information products. In this stage, the compiled information materials is packed according to the users request like spiral binding (if the request is for hard copies), or CD creation (if the request is for electronic copies). Once the final product is ready it is mailed or hand delivered to the concerned user. In case of on-line access (*via* magindia.com) if the request is for on-line access the user is given a password (intimation *via* e-mail) to access the contents directly from the website.

Quality Parameters: User-friendly packaging, timely delivery, uninterrupted on-line access

Quality Guardians: IT staff, Support Staff and Logistics Partners

Stage 7: Receiving the Feedback and Evaluation

Once the material is mailed to the users, feedback is sought about the quality of the product in terms of content coverage, sources referred, relevance, user friendliness etc. In case of IT based products like CDs or On-line access, users are educated with an on-line demo or offline manual. If the user requires more information it will be supplied again.

Stage 8: Continuously Monitoring the Quality

The same procedure is maintained and continued every time any service offered. Based on written manual, people working at different stages of the service will ensure that continuously the same quality is maintained.

Quality Parameters: No excuses for poor quality information products.

Quality Guardians: The complete library and information centre team

Stage 9: Total Customer Satisfaction

The end stage of the quality management cycle is total customer satisfaction. Therefore, loyal customers from all over India request for various information products and services besides internal users.

Quality Parameters: Customer's delight and loyalty.

Quality Guardians: The complete library and information centre team and the user.

7. PROBLEMS IN MAINTAINING QUALITY

It is easy to write and talk about implementing quality management in LIS services. In reality, there are many impediments, which come into our way in achieving quality. The following are the problems we occasionally face while offering various information products and services, which sometimes resulted in the delivery of poor quality information services.

(*a*) Library staff's professional skills, communication skills and co-operation
(*b*) Availability of up-to-date information resources
(*c*) Co-operation from the users
(*d*) Co-operation from the top management
(*e*) Co-operation from the suppliers
(*f*) Availability of tools and equipment
(*g*) Internet connectivity
(*h*) Location barriers and logistics support

8. SPECIAL SKILL REQUIREMENTS FOR LIS PROFESSIONALS

As the LIS professionals are the key players in quality information

products and services, the emphasis should be more on them. The LIS professionals working in the MAI should have the following skills apart from the basic professional skills.

(*a*) In depth knowledge of the marketing the advertising industry (like knowledge of ad agencies, marketing agencies, various industry sectors, product and service segments etc.)

(*b*) Collection development ability and knowledge related to the advertising and marketing industry related information sources (like journals, magazines, books, reference materials, other specialised information products like agency creative materials, market research databases and publications, web based resources etc.)

(*c*) Knowledge on various media (publications, broadcast, Internet etc.)

(*d*) Specialised documentations skills (*e.g.* how to index and document agency creative work suck like press ads, poster, TVCs etc.)

(*e*) Skills to preserve the various specialised information resources IT skills in handling multimedia information content.

(*f*) Excellent communication and negotiation skills

9. IT A TOOL FOR QUALITY MANAGEMENT

The single largest factor, which has caused changes, if any in the library and information services, is information technology.[5] As every one knows human errors are one of the critical factors, resulting in poor quality information products and services, it is always advisable to use IT as a tool to automate various activities of library and information centres. This is one of the objectives with which magindia.com was started as an on-line advertising library for the marketing and advertising industry of country. With magindia.com on-line today, the Indian Advertising and Marketing Industry has access to a single point reference library which is available in 24 × 7 scale anytime anywhere to access the most of the information products and services needed by MAI. Similarly, MICA library has developed various databases like press clippings index, TVCs index, books database etc. that are currently available on LAN, and will be soon accessible over the Internet. These are just examples. Many more IT based databases,

related to the MAI are jointly being developed by magindia.com and MICA library, which would soon hit the market. Based on the experience, it is observed and hoped that offering IT based library and information services are the ideal way to maintain quality. It is needless to say that IT application in libraries and information centres will avoid duplication of efforts, speed up the search and retrieval of information, and provide timely delivery of information, which is what our users are looking for.

10. CONCLUSION

The very purpose of the libraries and information centres are to cater the information needs of the library users. The ultimate decision-maker of the value of piece of information is the user.[6] Today, in the web dominated information era, the library users are exposed to the information world. They are very precise about what they are looking for. Besides, most of the library users', professional ability will be measured based on what kind of knowledge they possess and by using which what kind of output they give in their respective profession? Especially, in MAI use of poor quality information and knowledge can cause huge losses not only to the ad agencies, but also to the clients to whom the agencies are rendering services. Under these circumstances, no library user (irrespective of what area he is into) is going to accept low quality information products and services. If this is what our users need, then, it is the most desirable that we LIS professionals set high standards for ourselves in offering user oriented library and information services with quality conscious. This will not only ensure quality management in libraries and information centres, but will also bring total user satisfaction. Thus, library professionals can earn name for themselves and fame and money for their parent organisation.

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Gyan Doot – A Pilot Project for Quality Assurance in Rural Information System in District Dhar (M.P.): A Brief View

S. KUMAR AND LEENA SHAH

ABSTRACT

The study is based on first ever Gyan Doot Project in India—a method of rural information network in District Dhar of Madhy Pradesh. The study reveals the concept, its plan and project, problem and suggestions.

1. INTRODUCTION

Literally Gyan Doot means "Knowledge Messenger". It is a project to spread knowledge in the villages. The Gyan Doot is first ever project in India for rural information network in Dhar district of M.P. The district has higher percentage of tribes and dense forests. The projects has won international acclaim including year 2000 Stochholms Challenge Award.

The project is an outcome of efforts of Collector Dr Rajesh Rajora, (M.B.B.S., I.A.S.) and of Chief Executive Officer of Dhar Panchayat Mr Amit Agrawal, implemented through District Rural Development Authority in the district.

It is basically an e-governance project. It is an information highway in the villages. Every village has a computer centre at a crossroad (*Nukkar* or *Chauraha*). One can get information about government; log in any complaint or request and can get answer within a week. Applications can also be moved on these computers to various departments of the government. The information on forests, crops, fields,

water resources of the villages/towns, tehsils, etc. are also available on these computers.

So far 21 village panchayats in the Dhar district have been provided with facilities of computers. Besides this eleven private sector information centres have been opened. These are called "Soochnalays". One such centre has been opened in Manwar Agriculture Mandi where latest prices of crops are made available to the farmers of various soochnalays. Land records of few tehsils of the district Dhar are also available on these computers.

Besides all this, it has an Internet connection to get global information. It has been linked with World Wide Web (WWW).

Very soon its role is being extended. It is going to start e-education covering 34 high schools and higher secondary schools of the tribal dominated Dhar district. Each school will get hardware and peripherals for connectivity. Students from class IX ownwards in these schools would receive membership of a computer club. They will receive on-line career counselling and be able to take aptitude test. It will have on-line model question papers. It will also have key information on Dhar district like geography, agriculture, demography and also quiz on internet server. Besides head start project has been launched on November 14, 2000 in 596 rural school in M.P. and 270 in Chattisgarh taking IT to rural areas.

Since Gyan Doot is a pilot project for e-governance, e-education would open a new chapter. Soon it is going to cover whole of Madhya Pradesh. Very soon the state is going to start 7800 IT kiosk with the help of private sector. To educate people with computers 7500 Jan Shiksha (Public Instruction) Centres have been selected in primary and secondary schools.

Besides, soon a university will also be available on-line in M.P. Through computers one can take admission and course at home. Thus information highway has been tuned towards rural areas. Madhya Pradesh is first in India to launch this project which is unique internationally.

To make the Gyan Doot project a great success, Government of Madhya Pradesh is taking been interest. A policy is being formulated to bring together IT with common peoples' need and benefit. It is not computer industry oriented but common men oriented. Software in Hindi are being developed to eleminate dependence on English.

2. GYAN DOOT AND PUBLIC LIBRARY INFORMATION NETWORK

The state of Madhya Pradesh so for does not have a well-knit Public Library Network. Public libraries can play vary vital role in making the programme success. If public libraries are available in each village and town, these can work as centresfor Gyan Doot. Actually, a librarian is a Gyan Doot himself. His role will be extended by using computers. No one else except village librarian can be better Gyan Doot for the success of Gyan Doot Project. What is required is a strong will among professionals, policy makers and politicians. So, Public Libraries and Information Centres Act should be passed. Gyan Doot Project may make use of these libraries and information centres.

Through Gyan Doot project, we can bring our remote villages globally nearer to each other. They can be included in Global world very soon.

The Gyan Doot project may help in better yield of crops by providing timely information and expert advice to individual farmers. E-voice and E-chat can bring farmers and experts face to face to solve such problems. It may be called E-agriculture.

It may also have an impact on law and order. The crimes in remote villages can be reported in time and the timely help of police, administration and fire brigade can save life and property in these villages.

Very soon, dependence on a computer for Internet connection, is going to be replaced by a device which can work on our T.V. sets at a cheaper rate. This can bring Internet connections to almost very home. In the villages, farmers can receive information at home. Use of optical fiber cables for connectivity is also on its way. Government of India has also passed Direct to Home (DTH) Policy which will change face of villages where it is not easy to lay cables. All these developments are going to bring big changes in IT in near future. The success of Gyan Doot can be assured by adopting the new developments.

3. PROBLEMS

Like other project, it is also not free from preliminary problems. It seems that people are skeptical about it effectiveness and ease of operation. But one hopes that the misconception about IT will be removed soon and people will embrace the projects like Gyan Doot in their day to day activities and problem solving.

4. SUGGESTIONS

1. The Gyan Doot project should be adopted in every district of M.P. to keep this torch lit.
2. The M.P. Public Libraries & Information Centres Act should be passed as early as possible.
3. The Gyan Doot Project should work in close coordination with these Public Library & Information Centres.
4. Efforts must be taken to keep it alive & let it not get bad fate after its policy maker & implementer is transferred.
5. Other districts of M.P. & other States governments may take incentive from the project & make it a success in India.

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Integrating Quality in Personnel Management in Public Libraries: A Case Study of City Central Library Hubli–Dharwad

B.D. KUMBAR

ABSTRACT

This paper attempts to, present the case study of personnel management in City Central Library (CCL) of Hubli-Dharwad. With focus on the future plan of action, steps taken by the State Library Authority in improving the quality both in personnel management and services are highlighted.

1. INTRODUCTION

Personnel management is that part of the management function which is primarily concerned with the human relationships within the organisation. Its objectives and the maintenance of these relationships on a basis which, by consideration of the well-being of the individual, enable all those engaged in the undertaking to make their maximum personal contribution to the effective working of the undertaking. Personnel management is normally an approach, a point of view, a new technique of thinking and a philosophy of management, which is not only concerned with managing personnel of the statutory body, but also with solving the problems of an organisation intelligently and equitably and in a manner which ensures that the human resource potential is properly developed. It also pertains to deriving maximum satisfaction and making efforts to achieve the objectives of the organisation and also ensure that good human relations are maintained within the organisation.

Among all the resources available to any developmental process, human resources are the most vital and valuable ones that enable utilisation of all the other resources effectively. It is comparatively recent perception of management specialists to view human resource management as requiring greater attention than looking at it merely as control and deployment of personnel. Although personnel management and human resource management are considered synonymous in some areas; there is a difference in approach in the latter. The modern approach is to introduce a new work culture in organisations, by motivating the staff and enabling them to acquire necessary, new and innovative skills, techniques, giving recognition to their performances and rewarding such performances. The strategies to introduce methodologies and techniques to develop human resources to reach their optimum level of efficiency and effectiveness are the areas of management science that have received considerable attention in the last part of the twentieth century.

Karnataka State Public Library System in general and City Central Libraries (CCL) in particular have maintained a good rapport with the public. City Central Libraries are serving the cause of homogeneous group of users and this needs an alertness in fulfilling their multifarious demands. Quality library services can be offered by quality library professionals. In a situation where funds are plenty and users' interest in library use is more, quality integration in personnel management is inevitable. This paper attempts to present the case study of personnel management in the CCL of Hubli – Dharwad with focus on the future plan of action. Steps taken by the State Library Authority in improving the quality both in personnel management and services is highlighted.

2. SCOPE OF THE STUDY

The scope of personnel management has changed over a period of time. This change has occurred due to the growth in personnel functions, the change in the personnel management philosophies and the ever changing organisational demands, the clientele, and societal and government concerns. Production oriented, service oriented and research and development oriented establishments are giving much importance to the aspect of quality in personnel management. Public library being a social establishment is more concerned with a

personalised service to the reader, who comes to the library seeking knowledge and information. The service rendered, calls for a thorough technical knowledge of both the readers and the documents. Hence professionally trained personnels are very much needed to fulfil the aims and objectives of a public library. In this respect City Central Library, Hubli-Dharwad is not an exception.

3. METHODOLOGY

In order to study the existing situation, as regards the personnel management in the City Central Library, Hubli-Dharwad, a questionnaire method is used. An exhaustive questionnaire covering the various aspects of personnel management in the context of the public library, is designed. In addition to the questionnaire, an interview in the form of discussion was conducted with the Chief Librarian, the professional and semi-professional staff of the library. Above all, some of the documents such as books, periodical articles, reports of the committee, plans, manuals are also consulted. Since the study pertains to a specific region and to a specific library certain broad suggestions are also given.

4. CITY CENTRAL LIBRARY HUBLI-DHARWAD: GROWTH AND DEVELOPMENT

With the enforcement of the Karnataka Public Libraries Act, the City Library Authority for the City of Hubli-Dharwad came into being on 5th October1966. According to the provisions the act, the City Central Library at Dharwad came into existence in 1968. The library is located in the heart of the city. Since its inception City Central Library has made a commendable progress and established twenty-two branches and seventeen service centres in different parts of Hubli-Dharwad Corporation area.

At present the Library provides services to around 9,00,000 population of twin cities with 5,68,000 books and 1,300 daily newspapers, magazines and periodicals. It has around 28,000 registered borrowers and everyday more than 10,000 people visit and use the books and periodicals. To provide better and qualitative services to larger population the CCL certainly needs a qualitative personnel management approach.

5. STAFF FORMULA

In order to analyse the personnel management in the City Central Library, Hubli-Dharwad, Dr. S.R. Ranganathan's staff formula, which is given below, is taken as the model. In other words the analysis of the personnel management is made in the light of the Dr. S.R. Ranganathan staff formula.

For Professional Staff

(*i*)	Book selection	: One person for every 6,000 volumes added in a year.
(*ii*)	Periodical publications	: One person for every 1,000 periodicals section currently taken.
(*iii*)	Classification and cataloguing section	: One person for every 2,000 volumes added in a year.
(*iv*)	Maintenance section	: One person for every 2,000 volumes added in year and one person for every 50,000 volumes in the library.
(*v*)	Publicity section	: Minimum one artist
(*vi*)	Administrative section	: Minimum one library accountant One steno-typist and One correspondence clerk
(*vii*)	Reference section	: One person for every 50 readers using the library in a day of the year (other than those reading the current issues of newspapers and periodicals or the text books)
(*viii*)	Circulation section	: One person for every 1,500 hours for which one wicket-gate of the library has to be kept open in a year.
(*ix*)	Supervisory section	: One librarian One deputy librarian

Department of Public Libraries, Government of Karnataka has also laid down the workable staff formula with the help of experts. The same is given in the following table.

Norms Fixed for Different Categories of Staff

Sl. No.	*Designation*	*Number of hands allowed*
(*i*)	Chief Librarian	One for each District and City
(*ii*)	Technical Assistant	A minimum of one Technical Assistant (Librarian) for each District Central Library, City Central Library. The Technical Assistants posts admissible to a District Central Library/City Central Library may be particularly converted into those of Asst. Librarian or Library Assistants, as in the statement below:
(*iii*)	Assistant Librarian	As shown in the table above
(*iv*)	Library Assistants	Upto 125 books issued per day, one Library Assistant 126-250 books issued per day: Two Library Assistant 251–400 books issued per day – Three Library Assistants. One Library Assistant for a newly opened Branch Library to be allowed temporarily for a year. Further continuance being subject to revision of workload.
(*v*)	Helper	Equivalent to the number of Library Assistants. Admissible to the book issue section.
(*vi*)	Binder	One Binder and Asst. Binder to the State Central Library. One Asst. Binder District Central Library/City Central Library, if binding machine are available.
(*vii*)	1st Division Clerk	Two first Division Clerks for bigger City Central Libraries/District Central Libraries like those at Dharwad, Belgam and Mangalore. One first Division Clerk for

Sl. No.	*Designation*	*Number of hands allowed*
		smaller City Central Library/District Central Library.
(*viii*)	2nd Division Clerk	One Second Division Clerk to each District Central Library/City Central Library.
(*ix*)	Typist	One Typist to each District Central Library/City Central Library
(*x*)	Peon	One peon to each District Central Library/City Central Library
(*xi*)	Watchman	One for each library having more than 5,000 books.

Average number of books purchased	*No. of Librarians/Assistant Librarians/Library Assistant allowed to a District Central Library/ City Central Library.*		
	Librarian	*Asst. Librarian*	*Library Assistant*
Upto 4000 books	1	–	–
4000 to 6400	1	–	1
6401 to 6800	1	1	–
6801 to 8800	1	–	2
8801 to 9200	1	1	1
9201 to 11600	1	1	2
11601 to 14400	1	2	2

The number of Librarians/Assistant Librarians/Library Assistants admissible should be worked out on the average number of books purchased in a year to be arrived at taking into consideration the purchase made in last three years.

As and when the annual average work-load increases, say, from 6,400 to 6,800 books purchased, the department may send proposals to upgrade the post of the library assistant to the Assistant Librarian.

Similarly, when the work-load increases further upto 8,800 books purchased in a year, the department will have to utilise the services of the Assistant Librarian elsewhere, if justification is forthcoming, and ask for two posts of Library Assistants. Otherwise, the department should ask for down-grading the post of Assistant Librarian to that of Library Assistant along with the creation of one more post of Library Assistant. Action to down-grade or abolish posts should, however, be taken only after the incumbents are provided equivalent posts elsewhere.

6. STATUS AND WORKING CONDITIONS

The Table no. 1, 2 and 3 present the caderwise, qualification, designation and the salary of the professional, Semi-professional and Non-professional staff working in the CCL Hubli-Dharwad. According to their qualifications the professional and semi-professional staff and their designations are fixed. The status of the professional staff is fair when compared to semi-professionals. Even there are few instances when the staff inspite of having higher qualifications like M.A., B.L.I.Sc. have not been promoted either to the position of Assitant Librarian or Librarian. They are still working as a Library Assistants.

The working condition in the CCL is so congenial that majority of the staff, without looking into their salary and other facilities, are fully committed to the work. Because of competitive and dedicated staff the CCL is in a position to earn better name and fame in the twin city of Hubli-Dharwad.

Table – 1: Cadre Strength

Sl. No.	*Category*	*Existing Staff*	*Vacant*	*Total*
1	Professional	10	NIL	10
2	Semi-Professional	26	03	29
3	Non-Professional	26	02	28
	Total	62	05	67

Table – 2: Designation and Qualification of Staff of CCL

Sl. No.	*Designation*	*Number*	*Qualification*
1	Chief Librarian	1	M.A.M.Lib.Sc.
2	Librarian	5	B.Lib.Sc.
3	Assistant Librarian	1	B.Lib.Sc.
4	Library Assistant	27	C.Lib.Sc.
5	Office Superintendent	1	S.S.L.C.
6	First Division Clerk	1	B.A.
7	Second Division Clerk	2	S.S.L.C.
8	Typist	2	B.Com. Senior Typing
9	Library Attendees	18	VII Standard
10	Peons	2	V Standard
11	Watchman	2	V Standard
12	Driver	1	VII Standard
	Total	62	

Table – 3: Pay Scales of Staff Working in CCL

Sl. No.	*Designation*	*Pay Scale (in Rupees.)*
1	Chief Librarian	7,400 – 13,120
2	Librarian	6,000 – 11,200
3	Assistant Librarian	5,200 – 9,550
4	Library Assistants	4,150 – 7,800
6	Office Superintendent	5,200 – 9,550
7	First Division Clerk	4,150 – 7,800
8	Second Division Clerk	3,850 – 7,050
9	Typist	3,850 – 7,050
10	Library Attendees	3,000 – 5,450
11	Peons	2,775 – 4,950
14	Watchman	2,775 – 4,950
12	Driver	3,300 – 6,300

The salary of the permanent staff is met from the consolidated fund of the State Government and in case of casual employees City Central Library fund is used to make the payments.

7. STAFF RECRUITMENT, DUTIES AND RESPONSIBILITIES

City Central Library, Hubli-Dharwad is the well-established organ of the Department of Public Libraries. The staff required for operating various job and services is selected by competent body of the Government. In the case of City Central Library, Hubli-Dharwad, the Karnataka Public Service Commission is vested with responsibility of recruiting the Chief Librarians and other posts. Whereas the posts of Librarian and Assistant Librarians including Library Assistants have been selected by the State Level Departmental Recruitment Committee. These posts are however selected after seeking the necessary concurrence of high-level authority.

Following sections briefly mention the duties and responsibilities of the professional and semi-professional staff of the library.

7.1 Chief Librarian

The following are the duties and responsibilities of Chief Librarian:

(*i*) Administrative head of City Central Library, looks after the administration of the library, library office, control of the staff of City Central Library and its branches.

(*ii*) Acts as the Secretary to the City Library Authority responsible for preparing
- (*a*) Agenda of Meetings
- (*b*) Budget
- (*c*) Maintaining Accounts
- (*d*) Carrying out the decisions taken in the committee meeting.

(*iii*) Selection of books/periodicals and other reading materials.

(*iv*) Arranging seminars, conference, workshops, film shows and such other extension actives.

(*v*) Keep vigil over staff

(*vi*) Maintaining correspondence with Directorate, down to the person in charge of branch library.

7.2 Librarian

Librarian works as in-charge of technical section, maintenance, acquisition section, or in-charge of branch library. In City Central Library there are only ten professionals other than Chief Librarian. They are working in technical, acquisition, maintenance and reference sections of CCL.

Following are the important functions of Librarians:

(*a*) To assemble, preserve, and administer books and educational materials in organised collections in order to promote, through guidance and stimulation, an enlightened citizenship and enrich personal lives;

(*b*) To serve the community as a general centre of reliable information;

(*c*) To provide opportunity and encouragement for children, young people, men and women to educate themselves continuously.

7.3 Assistant Librarian

Incharge of the branch library. Looks after the routine correspondence with City Central Library. And also sees that the library runs smoothly.

7.4 Library Assistant

(*a*) Acts as a in-charge of branch, looks after correspondence, looks after the smooth running of the branch. Keeps vigil over reading materials and works in circulation, attends shelving of books, prepares a list of books for binding;

(*b*) Accessioning of books, attends processing of books, prepares the catalogue cards.

(*c*) Works in periodical section; keeps the record of periodical arrivals, maintenance of periodical section.

(*d*) Maintain statistics of circulation, visitors, books borrowed, members attended etc.

8. STAFF TRAINING AND CONTINUING OF EDUCATION

Continuing education is an essential provision to be adopted in any profession. Because it helps in keeping abreast with the developing

professional knowledge. The Fifth Law of Library Science, "Library is a Growing Organism" emphasises need to keeping uptodate in the developing aspects. There are several facilities for continuing education like seminars, symposia, conference, workshops, short term courses and refresher courses. In addition to these periodically published manuals, instruction guide books also help the professionals and semi-professionals to keep in touch with the latest developments.

9. JOB SATISFACTION

This is a hard concept to conceive easily. It also poses so many problems to assess. However, it is stated by the Chief Librarian, that there is a job satisfaction amongst the professional and semi-professional staff in the City Central Library, Hubli-Dharwad. A casual discussion with the professional and semi-professional staff of the library revealed that they are satisfied with their respective jobs. Until 1978 there were as many as 600 casual employees (daily wagers) working in the Department of Public Libraries. There was a hue and cry amongst the employees because of uncertainty of their jobs. The Government of Karnataka was convinced about the problems of the daily wage employees and the same was solved stage by stage. The generous and humane attitude of the authorities in accommodating the daily wage employees, has given a vital stimulus to the professional group to work in unison in the department.

10. FINDINGS OF THE STUDY

(*i*) The staff structure in the public library is not clearly defined.

(*ii*) A large proportion of the personnel do not have the motivation to work and not well-acquainted with work ethics.

(*iii*) Personnel in public libraries are inadequately organised and supervised; and

(*iv*) The opportunities for the personnel working in the public libraries to avail chances of training and continuation education are also very meager compared to other types of libraries.

(*v*) Periodical review of the performance of the professional staff is missing to a considerable extent.

11. SUGGESTIONS

(*i*) The CCL should be adequately staffed with professionals and semi-professionals including non-professionals.

(*ii*) The city library system should be adequately staffed with the present staff retained and assigned, in some cases, to new and more reasonable positions, and with the addition of a co-ordinator of a branch and Book Mobile Services and a co-ordinator of children's services to develop the extension services and the children's section respectively in the system.

(*iii*) A classification and pay plan including personnel policies should be developed, besides a compilation should be made of all the personnel policies.

(*iv*) A workable personnel formula should be prepared in co-ordinating the established existing staff formulae.

(*v*) Importance should be given to the professional staff, specialised in particular field of activity.

(*vi*) Adequate facilities should be provided in respect of continuing education, to the professional and semi-professional staff.

(*vii*) As the salary and total emoluments are playing considerable role, attention should be given in this direction by improving the pay scales as and when there is a need.

(*viii*) In the interest of the better performance it would be better, if the existing 25 per cent of internal promotion, be raised to 50 per cent.

12. FUTURE PLAN OF ACTION

It is the need of the hour that public libraries in order to rebuild their image in the society, have to go for quality integration in all their products and services. Gaining the goodwill and confidence of the user community by the prompt and quick services has to be taken very seriously. This calls for evolving a strategy where the professionals at all levels are motivated and exposed to new skills and techniques. Education and training, work exposure, group discussion, information technology orientation are some of the activities to be strengthened in this respect. Department of Public Libraries in collaboration with the various human resources development organizations and university department of Library and Information Science plan for the

programmes of quality integration specifically for personnel management in public libraries.

13. CONCLUSION

The professional staff of the City Central Library should be dynamic and vibrant to achieve effective library services for the whole Hubli-Dharwad Corporation area. Hence, there is need for participative approach among the professional staff to supervise the semi-professional staff or sub-professional and clerical staff, to assist the public to make the effective use of books by planned and programmed collection development.

It is the responsibility of the authorities to translate the essence of Total Quality Management (TQM) by integrating quality consciousness. Emerging trends in this direction from other service oriented organisation are worth emulating.

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Public Library Scenario vis-à-vis Quality Assurance in Orissa

B.D. PANDA

ABSTRACT

This paper brings to fore the rich tradition of public libraries in the state of Orissa. How this institution changed and sustained itself has been described in detail. The author suggests future course of action for public libraries in Orissa, which are fortunate to have a live and wide network.

Public library as an organ of the society in Orissa developed right in the historical periods. During the reign of Matharas and the Eastern Gangas *Agrahars* and *Debagraharas* were established all over the kingdom of Kalinga and Utkal. *Agrahar* was a place of worship and reference and education for the general public under the care of a Pandit of Brahmanical cult with full support and patronage of royalties. The Kings provided subsistence to the priests for the religious discourses and teachings to the public who visited the *Agrahars*, *Debagraharas* and temples.

With the passage of time temples became the centres of learning, reading and recreation. During the periods of the Samavansis, the Imperial Gangas and the Suryavansis, the place of public library shifted to the temples. Each big temple was dotted with good public library. The case studies conducted in the temples of Dharaket, Lingarja at Bhubaneswar and Jagannath Temple at Puri speak of the great tradition of the temple libraries in Orissa. A temple library was presided over by the priest and the councils of the learned Pandits had to supervise the working of the library. The seekers of the knowledge were

the students, the teachers, the noble-men and astrologers, artists and the advocates or law practitioners.

Monastries and tungis developed gradually in the medieval period and they were the modified versions of the temples. Education, information and recreation centres were run from the monastries and also tungis. Towards the close of 18th century, Europeans occupied Orissa and introduced clubs and societies of public libraries. Specific buildings were erected and named as libraries and clubs. The purpose of serving public through this public library was to spread education and spend the leisure time with recreation and to use the knowledge through education in a club or a society. The quality of public library service was assured through the regulation of the Societies Registration Act 1860. The society was devoted for propagation of knowledge and information. Churches and mosques in addition to temples were also built during this period.

As the objectives of the public library were transparently provided through the societies of churches and mosque, old libraries, tungis, temples and monastries began to fade. Printed books replaced the manuscripts and *Pothis*. Education became free for all. The restriction of use on library in respect of cast, creed, colour and sex and place were removed. A true public library began to establish its links with every and each willing user of the libraries. Newspapers, journals, periodicals became the materials of recreation, information and education in the modern public library. Users of all ages, groups, language, religion, colour had adequate access to the world of learning. The purpose of bringing a democratic society was truly fulfilled through these libraries. With the passage of time, now we find that each village is working with a Sangha or a society or a club or an N.G.O. of some kind or other devoted to the improvement of quality in this service.

In order to assure quality of life and the quality of service, Government of Orissa have established the H.K.M. State Library, a Bhubaneswar Public Library and Soochana Bhawan and a host of several libraries in the city of Bhubaneswar. The quality assurance of public library with respect to timely opening of library, timely providing of reading materials and listening to the requirements of readers is being adequately looked into by H.K.M. State Library Bhubaneswar Public Library, the Soochana Bhawan, the Ramkrishna Mission, the Kedarnath Gavesana Parishad, the Town Hall Library and so on.

In the district headquarters and the Mufasils and public libraries have been assured through District Libraries, District Information Centres, Town Libraries and other Information Centres, and various N.G.Os. The village libraries, Panchayat libraries are responsible for providing adequate reading material to public through their newspaper, journals, periodicals and the books gifted by the R.R.R.L.F. Philanthrophy, benevolence and munificance have also come forward to provide material help in rendering public library services. Accordingly trusts have been established to carry out the objective of timely provision of sanction and grant-in-aids, funds etc. for the quality maintenance for a public library. The annual reports and the activities reports of the public libraries speak of the commitment and assurance contained and declared in their papers.

Therefore, the public library scenario in Orissa gives us a bright picture of the quality assurance of public library services as it is rolling down from the past. It would be more appropriate if the societies and clubs and libraries are well-equipped with the non-book materials so that the readers are attracted to come to the library premises. Since this current age is for information technology, assurance of quality of library services could be achieved by changing the objective of the library to moving to the door steps of the people than being stangnant at one point. Given such a scenario, the readers could also utilise the resources of the public library through network, websites, paging and wireless, e-mail and various other devices.

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Quality Assurance in DRDO Technical Information Centres in Support of Defence Research at Hyderabad

B. NAGA MOHAN RAO

ABSTRACT

Today, our country is facing multiple challenges, These are commercially motivated control regimes, technology denials and sanctions by developed countries, targetting our institutions and industries. Technological self-reliance is the only answer to counter these challenges. We need to harness the available talents within the country using innovative management methods and build technological excellence. This article deals with how the DRDO TICs are able to provide quality information services to the clientele and strategies they need for the purpose.

1. INTRODUCTION

Defence Research and Development Organisation (DRDO) was established by merging together the technical establishments under three service headquarters in 1958, with the aim of creating an organisation that can cater to defence forces' technological needs.

DRDO has emerged in the last few decades as one of the premier technology organisations in the country with its fifty two research laboratories and establishments and a manpower of over 30,000 personnel. Large number of technologies encompassing almost the entire spectrum of science and engineering have been developed and refined in the course of executing many important national defence R&D programmes like missiles, Light Combat Aircraft, Main Battle Tank, military bridging systems and electronic warfare systems.

Hyderabad-based defence laboratories are mainly concentrating

on the Integrated Guided Missile Development Programme (IGMDP). It was initiated to design, develop and lead to production of our types of missiles *viz* Prithvi, Trishul, Akash, and Nag for the Indian armed forces and a long range re-entry technology demonstration Agni. The missile system has contributions from many laboratories which include contributions at various allied issues from other laboratories of DRDO, academic and research institutions, Public Sector Undertakings etc.

2. ROLE OF TECHNICAL INFORMATION CENTRE'S

Technical Information Centre (TIC) is intended to supply relevant information to scientists, programme planners, and other scientific and technical staff, and to become a centre for building a collection reports of the scientific work of the nation, both published and unpublished.

Rapid access to the most current information is critical to the success of research initiatives. In the space era, dominated by computers and communication satellites, barrier of distance has been removed by establishing instant communication between far off continents. But authenticity and quality of effective exchange of information are still impediments on a world wide scale. These have to be overcome for achieving effective and quality information services. These include:

- Speedy access to the most relevant information resources
- Prompt delivery of documents and information
- More current and highly relevant collections

However, due to material, and human resource constraints, the above issues are not likely to be met by the research scientists.

TICs of DRDO are expected to fulfil the following objectives

- To obtain all the relevant scientific documents/periodicals, which may be of the interest for the laboratory
- To inform scientists and other users, on articles which may be of value to them by issuing a monthly bulletin of abstracts
- To answer specific enquiries from information available in the laboratory

- To supply photocopies of articles required by scientists for R&D work
- To be a channel through which the scientific work of the nation is made known and available to the rest of the defence laboratories.

3. NEED FOR INFORMATION SUPPORT

A service provided by any information centre draws attention to information possessed in its collection in anticipation of demand. This is done by preparing and circulating news sheets, reading lists, abstracts, particulars of articles in current periodicals etc. It will be of interest to potential users of the service.

As defence is a worldwide industry, relevant information may accumulate in large or smaller packages in almost every country. The information generated is more useful and should be supplied in an efficient manner.

4. QUALITY OF INFORMATION IN TICs

To provide the quality information and to achieve the goals of the laboratory the below mentioned strategies are to be adopted:

- Provide information for designing and developing frontier technologies
- Provide timely information
- Meet the requirements of our research community by providing quality information
- Maintain upgraded and infrastructure in providing technical information
- Human resources for innovative professional excellence

LIMITATIONS

The problems of scientists at various defence laboratories are universal. However, this article confines only to the TICs of Hyderabad, and it is hoped that the issues, conclusions, and strategies discussed are going to be equally applicable to all other TICs of defence laboratories.

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Quality Assurance in Government Libraries

D.K. SHARMA

ABSTRACT

The study presents a picture of quality of service in the Government libraries and the impact the Review Committee had on the quality of service in Central Government libraries. The study also attempts to find out the reasons for such a miserable state of service and steps needed to improve it.

1. INTRODUCTION

Quality assurance means building quality into every step of the process and doing it right the first time and every time. According to W.Edwards Deming reliance on quality control through end-of-line inspection does not work and is too costly. He stated that building in good quality at every step is more effective than inspecting out bad quality.

In recognition of the importance of information in planning, administration, decision-making and policy formation, almost all Central Government ministries/departments have established their libraries. Library and information centres should recognise these objectives and provide quality of service to impress upon the authorities that we are an integral part of the organisation.

2. NEED FOR QUALITY ASSURANCE

The problem that has generated tremendous interest in quality management can be summed up in one word: *survival*. If we do not

provide information pinpointedly, expeditiously and accurately then users may resort to finding other avenues to collect information, which may result in depletion of library importance.

The theme of the Conference "Quality Assurance in Library and Information Science" is very appropriate and has been taken at the very right time. We have been demanding, for quite some time, good status and good pay scales but nobody took note of the services being provided by us. Nobody bothered to see whether status being demanded by us is equal to services being provided and whether we deserve it or not. So it is the time that we should think and find out what type of service is being provided by us and what steps are needed to improve it.

The quality of service being provided in the government libraries is decreasing day by day due to which the library professionals are becoming ineffective in their departments.

Laws of Library Science are not being followed in most of the libraries particularly in government libraries. The spirit of service, which was prevalent in 1960s and 1970s, has almost vanished. Nowadays collections are not kept up to date. Even in some libraries complete series of publications of their departments are not available.

Rare books, reports are not maintained properly. The books are not shelved properly and regular dusting of books is not done. Stock verification of books is not being done in most of the libraries. Proper references are not provided in the catalogues. Rules of lending of books are not being followed and serious steps are not taken to recover the overdue books.

2.1 Inter-Library Loan

The condition of inter-library loan service is not satisfactory. Most of the librarians hesitate to issue books on inter-library loan and some even refuse without checking from catalogue. As a result, the libraries have to purchase those publications which are not frequently required which leads to huge collections of unused books in the library and it also results in wastage of funds.

2.2 Book Selection

In most of the libraries, the book selection depends on the suppliers of

books. Whatever books they supply, the library committee usually selects them from that lot only. Other bibliographical sources are hardly used. As a result, the subject specific library does not have a complete and up-to-date collection of books.

2.3 Weeding

In Government libraries more than 30 per cent of books have outlived their utility and are of no use to the readers but actions are not taken to weed out such publications.

2.4 Additional Duties to the Staff

In many departmental libraries staff of library are given additional duties considering that the job of the library is not so important due to which work of the library suffers and therefore, due care is not taken to provide the technical services such as cataloguing, classifications CAS etc.

2.5 Progress in Computerisation of Library Activities

Most of the libraries have got computers and some libraries also got good software having provision for networking but most of the libraries have not yet computerised all their activities.

3. REVIEW COMMITTEE REPORT AND QUALITY OF SERVICE

Though Prof. D.P. Chattopadhyay Committee which was constituted on the recommendations of Fourth Pay Commission (Review Committee) took steps to improve the quality of service in Central Government libraries still more weightage is given to size of the library and its collection rather than quality of service provided in the library.

The Fifth Pay Commission in para 55.167 of its report also recommended that guidelines for the purpose of categorisation of libraries be revised, so as to give more weightage to the activities that are related to dissemination of information and other such non-conventional/special function performed by a Library.

The Commission also recommended that pending this review, additional weightage should be given to the following activities.

S. No.	Activity	Quantity	Points	
			Minimum	Maximum
1.	Specialised area abstracting	125	1	10
2.	Micro films/slides/ floppies/CD-ROM	100	1	5
3.	Publication by staff/ seminar participation	1	2	5
	Total			20

More weightage should also be given to activates such as networking, use of advance system of communication, weeding out of old publications, maintaining quality of service and keeping the library up to date.

Moreover, decision to decide the category of library on the basis of points obtained has been left on the F.A. of the concerned department. Had the job been entrusted to a Central Committee having on it professionals in Library and Information Science, the quality of service would have been much better in the libraries

4. REASONS FOR POOR QUALITY OF SERVICE

4.1 Insufficient Funds

After the implementation of the Fifth Pay Commission Report almost all the State Governments as well as Central Government are facing huge fiscal deficit which results in reducing budgets of libraries. On the other hand the cost of infrastructure to update the library as per the changing information technology is increasing rapidly. In such circumstances, it is very difficult to keep the library up to date and provide quality service.

4.2 Administrative Delay in Getting Approvals

Administrative delay also makes major hindrance in providing quality service. Most of the innovative ideas are dumped due to delay in getting administrative approvals in time.

4.3 Low Pay Scales

Pay scales of Central Government libraries are less in comparison to Public Sector and university libraries whereas, duties are almost same. This type of discrimination affects overall quality of performance.

4.4 Lack of Professional Staff

At present most of the libraries of the Central Government are understaffed. Though the Fifth Pay Commission has recommended more professional staff for each category of the library still it is doubtful whether its recommendations will be implemented or not.

4.5 Fewer Avenues for Promotion

As per the para 55.159 of Fifth Pay Commission, the Review Committee made several remarkable recommendations to improve the functioning of libraries and for career advancement of librarians but the Central Government kept the report confidential and only the portion which was accepted by Government finds mention in the implementation order issued by the Ministry of Finance. It would be better if full report of Review Committee is implemented to motivate the staff for giving their best.

4.6 Lack of Working Environment

Lack of proper working environment and indiscipline also create major hindrances in providing quality service. Staff of library behaves similarly as their counterparts in other divisions. So the total working environment of the organization also plays a major role in providing quality service.

5. STEPS TO IMPROVE QUALITY OF SERVICE

(*i*) All libraries should be computerised within definite time period preferably which a common software and gradually should be connected through Delnet or any other network.

(*ii*) Steps should be taken to improve inter-library loan service to derive maximum benefit of the resources available in the government libraries, otherwise purpose of creating network of libraries would be defeated. Librarians should be made responsible for timely return of books borrowed on inter-library loan.

(*iii*) The books/publications, which have outlived their utility, should be weeded out so that space could be made for new publications.

(*iv*) Old reports/books/documents and rare publications more than 25 years old should be sent to the National Archives for better up keep and one point reference.

(*v*) Better pay scales and better prospects of service should be provided to improve efficiency of the staff.

(*vi*) *Excellent collection:* Due care should be taken while selecting books/periodicals for the library.

(*vii*) *Library committee:* The progress and quality of the library also depends on attitude of members. Due care should be taken while selecting members for the library committee. Besides subject specialist, officers who have interest in books and library should be given preference.

(*viii*) *Creating Working Environment:* Someone has astutely remarked, "You cannot motivate alone". All you can do is—create an environment wherein whatever innate motivation that exists with an individual can be expressed in the form of effective work. Librarian should work as an environment creator. He should find environment variables that can be carefully and diligently implemented to create the opportunity for motivational expression, resulting in outstanding quality service.

(*ix*) A feel good factor may be provided to users. The feel good factor is often linked to credibility, courtesy, responsiveness and friendlines.

(*x*) *Establishing good rapport with the other departments:* Librarian should also take action to maintain cordial relationship with other departments to derive maximum resources for the library and to reduce unnecessary delay in getting administrative sanctions.

(*xi*) A questionnaire may be sent to the users asking their views about the different services being provided and suggestions to improve them. On the basis of responses a time bound frame programme may be developed with the complete involvement of the staff and accordingly standards may be set to achieve the quality.

(*xii*) *Changing role of library and information centres:* With the massive use of Computer and Internet, the role of libraries has changed from storage point of library resources to disseminator of information. Considering this, the staff should be given training to take up the challenge of information technology. Now the question is not just of big library, big collection, big infrastructure and so on, but better library, better collection and better managed infrastructure.

6. CONCLUSION

The main reason for miserable service in government libraries is lack of working environment and funds. Use of computers, networking and proper training to staff would definitely help in improving quality of service.

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Quality Assurance in Indian Judical Libraries

BRIJBHOOSHAN KHARE

ABSTRACT

Being the important wing of parliamentary system, judiciary requires a strong library and information system having best quality of services. Presently the judicial libraries are not in such a position as these should be. In this era of information technology these libraries are still in traditional form. In such circumstances quality assurance is still a far cry. This paper describes the necessary steps to improve the position of judicial libraries. Main focus is on High Court libraries.

1. INTRODUCTION

Function of a special library is to serve the parent institution to achieve its aims and Objectives.[1] The judicial libraries are the special libraries. These have been established to serve the judicial process. Indirectly these libraries are serving the society and are quite helpful to establish justice, equity, discipline and peace in the nation.

On January 26th, 1950 the Federal Court gave way to the Supreme Court under the new Constitution (article 124) and thus began an exciting new era in Indian legal history. On 28th January 1950, the Supreme Court was inaugurated.[2]

Besides the Supreme Court, there are 18 High Courts in India. These High Courts are Known as—Allahabad High Court (1966), Andhra Pradesh High Court (1954), Bombay High Court (1862), Calcutta High Court (1862), Delhi High Court (1966), Guwahati High Court (1948), Gujarat High Court (1960), Himanchal Pradesh High Court (1971), Jammu & Kashmier High Court (1928), Karnataka High

Court (1884), Kerala High Court (1958), Madhya Pradesh High Court (1956), Madras High Court (1862), Orissa High Court (1948), Patna High Court (1916), Punjab & Haryana High Court (1965), Rajasthan High Court (1949), Sikim High Court (1975).

These courts, as the third wing of the Parliamentary system, have been playing a vital role in upholding the sovereign, socialist, secular, democratic structure of the republic of India by pronouncing important judgments.[3]

2. NEED FOR LIBRARY

Justice and judgments depend on the precedent (an adjudged case or decision of a court, considered as furnishing an example or authority for an identical or similar case arising afterwards on a similar question of law. Courts attempt to decide case on the basis of principle established in prior cases).[2]

When a case starts in the court, both the advocates require books from which they cite the precedents. Simultaneously the Judge or Judges also require the same books to arrive at their judgment.

3. PRESENT SITUATION OF JUDICIAL LIBRARIES

3.1 Infrastructure

3.1.1 Building

Most of the court libraries are housed in monumental and nonfunctional buildings. Furniture and placement does not match with the standards recommended for a good library.

3.1.2 Collection

A judicial library contains following type of items in its collection.

(*i*) Law reports (The core collection).
(*ii*) Commentaries on the Acts and laws.
(*iii*) Bare Acts.
(*iv*) Law Reference Books.
(*v*) General Reference Books.
(*vi*) General Books.
(*vii*) Newspapers and magazines.

3.3.3 Staff

The judicial libraries have mostly been in non-professional hands. In this era of information technology some judicial libraries are still being looked-after by non-professionals. Generally these libraries have two types of staff

(*a*) Professionals (in minority).
(*b*) Non-professionals.

Absence of semi-professionals is a common thing in such type of libraries.

3.2 Services

A judicial library is responsible to provide services on three levels:

(*a*) In the library itself.
(*b*) In the court rooms/chambers of Judges
(*c*) In the residence of Judges.

Besides other services, reference service (of both types) is the main task.

4. HOW MUCH FAR FROM QUALITY ASSURANCE?

4.1 Inadequate and Inefficient staff

Output is directly proportionate to the input (here in terms of tools and techniques). Judicial libraries are still far from quality assurance. It would be necessary to describe the factors tht mar the quality of services:

- Minority of professionals and absence of semi-professionals is a handicap of the judicial libraries.
- Inefficiency of staff is the other weak point.

4.2 Urgency V/s Malfunctioning and traditional practices

Urgency for information is prime factor in the judicial libraries but the practices are traditional.

4.2.1. Classification

Since the beginners were non-professionals classification is not logical. As a result scattering of collection is a common thing.

4.2.2 Cataloguing

Same as classification the cataloguing is in arbitary form. Neither it provides the desired details, nor the approaches can be satisfied.

4.2.3 Circulation

- No standardised system has been followed.
- Circulation of un-processed books is a common phenomenon (due to urgency).
- No due date for returning of books.

4.3 Automation in its Embryo Stage

No efforts have been made for quick automation. Without automation it is impossible to keep pace with the emerging law literature.

4.4 Lack of Resource Sharing and Networking

Since the automation is in primitive stage, networking and resource sharing is still theoretical concept in judicial libraries.

4.5 Difficulties in Weeding-out of Books

In Judicial libraries the old document are equally important as the new. So weeding out of books is very difficult task.

4.6 Shortage of Space

Judicial libraries are also suffering from shortage of space.

4.7 Total Centralisation of Powers

The Judges (Library Authority) hold the actual powers regarding the library. Collection development/book selection, binding, rebinding and any other purchasing is not possible without permission of the Chief Justice. Though it is good to keep transparency in financial matters but unnecessary delay is its main drawback.

5. WAY OUT FOR QUALITY ASSURANCE

5.1 Acceptance of the Importance of Library

Without acceptance of the importance of library, its smooth functioning is not possible. Required cooperation should be provided from the administrative side.

5.2 Efficient and Adequate Professional Staff

Efficient and adequate professional, semi-professional and non-professional staff should be appointed.

5.3 Complete Automation

Complete automation is the only way to solve many problems in view of shortage of space and shortage of staff. If today automation is desirable, tomorrow it would be a necessity.

5.4 Resource Sharing and Networking

There should be a complete networking among the judicial libraries as the Rail-Net. It will result in resource sharing and co-operation.

5.5 Standardised and Logical Practice

Uniform Classification, Cataloguing, Indexing, Abstracting, Serial control etc. are necessary for quality services.

5.6 Weeding out of Books

With the help of non-book material judicial libraries can manage the oldest documents as well as the latest.

5.7 Decentralisation of Powers

Some powers should be delegated to the library staff. If would be helpful to take the minor decisions and to avoid the unnecessary delay in services.

5.8 Adequate Budget

According to the increasing needs of library, adequate budge should be provided.

6. CONCLUSION

Judiciary is a sensitive field. Judicial libraries are to serve the judicial process. But the present situation of these libraries is not satisfactory. In such a situation quality and quick services are expected, which is not possible. The responsibility for quality assurance does not lie upon the shoulders of the professional staff of the library alone. It equally depends on the authority of the parent institution.

The suggested steps would be quite helpful in quality assurance in

the library and information services in the judicial libraries of India.

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Quality Assurance in the Public Library System of Tamil Nadu The Role of Library Acts*

V.E. THILLAINAYAGAM

ABSTRACT

The paper highlights the need for revising National Policy on library and Information Sciences to ensure improved library service throughout the country. After a brief survey of the existence and working of the earlier Policy, the author emphasises on the need for an integrated methodology for quality assurance in LIS.

1. QUALITY ASSURANCE

The first model public libraries act in India was approved in the first Asian Educational Conference at Banaras in December 1930. This was the first step towards quality assurance in the area of the newly emerging Library Service.

The Madras Public Library Act came into existence in 1948. The following two steps were taken despite opposition to it:

(*a*) Adhoc LLA's in the place of existing local bodies
(*b*) Levy of Library cess and grants.

S.R.Ranganathan had earlier brought out 'National Library System: a plan for India' By 1950 'Library Development Plan' had been published. Even when there were guidelines and some standards available, these were not followed either for appointing staff, or for acquisition and other functions.

*This is a condensed version of the paper submitted by the author. Due to constraints of space it was not possible to publish the full paper.--Editor.

When the act stated that there shall be a Director of Public Libraries, it was presumed he shall be a library professional. But the rules notified that the DPI will also be the Director of Public Libraries. This has been the norm ever since under section 3 of the Act, there was to be a State Library Committee for the purpose of advising the government. The State Library Committee met rarely.

The special officers for libraries as a norm had to be specialists in the administration of libraries. Except for one, the norm was never followed. The favourite or the senior most Deputy Inspector of Schools was given a chance to become a Gazetted Officer and to serve the DPI rather than oversee the library work. The librarians trained at Government cost to attend the work of LLAs were not posted to LLAs. They were sent out to colleges and schools.

The staff in the LLAs at all levels were not recruited through Madras Public Service Commission. They came in through persons associated with LLAS, some qualified with Certificates/Diploma/ Degree in Library Science in the course of their employment and moved up as Librarians Grade III/II/I and District Library officers. While opening branch units under LLAs, neither the rules under section 44 nor the norms suggested by S.R. Ranganathan were followed.

Initially, existing libraries in the Municipalities, Taluk Boards, District Boards & Corporation of Madras were taken over. Further units were opened indiscriminately. Out of 1500 units, four hundred units were located in places where the population was less than 5000. On the other hand there were no service units in 250 places where the population is more than 5000. It would be economically ideal to have aided libraries which could serve as supplement to the services of the LLAS. There are 6 sections (17-22) under chapter 11 of the rules of the Act concerning aid to private libraries, but these remain only on paper. Under the rules of the Act, there were six sections (I 7-22, Chapter - 11), regarding and to private libraries. Aided Libraries could serve as a complement to LLA's services. But this remained only on paper.

2. ACQUISITION OF MATERIAL

There was no systematic attempt to acquire reading material. In the early stages books were purchased from the recommended list supplied by Director of Public Library. Subsequently no norm was

followed and the exercise of acquiring material became random. In some LLA's no books were purchased due to paucity of funds. Books were infact supplied to the branches directly without recording and processing. There did not seem to be any guideline regarding which classification system to follow. Some followed Colon and other Dewey, which was also not done properly. A clearly defined policy was not followed in classification. For want of qualified hands at the branches, books were not catalogued.

The Act provided library cess to be levied and collected by local bodies and sent to the LLAs. There was no record for the demand, collection and balance so far. The funds were used for everything other than the library purposes.

Under section- 4(e) of the Act, the Director shall submit to the government every year a report on the working of libraries. The reports which were sent were not comprehensive to cover the finance (income and expenditure on staff, books and periodicals, buildings etc..) staff (of various grades) use of books (total referred and loaned) etc.. about the library service rendered.

At Connemara, for the first time in 1962 a professional with MLS was appointed at CPL. Uptill then the library had been manned by clerks and the criterion had been their years of service.. With the appointment of a professional, office procedure as well as Library procedure was systematised following the State Administration manual and library administration by S.R. Ranganathan.

The administration of delivery of books (Public Libraries) Act of 1954 was upgraded by coordination between Delhi (Ministry of Education), Calcutta (National Library) and Bombay (Town Hall Library) by exchanging accession list with each other. This helped to constitute National Advisory Board of Libraries.

3. LIBRARY REORGANISATION COMMITTEE

As recommended by S.R. Ranganathan as early as 1957, a Library Reorganisation Committee was appointed in 1973. The LRC in its report in 1974 recommended that the department should be headed by a library professional, abolishing the LLAs as they failed miserably to fulfill the aims of library service during 1950-74.

Senior District Central Librarians were appointed as District Library Officers from 1977. Twenty five percent of library cess was

allotted to the centralised purchasing of books. About 10,000 titles were added during 1972-82. Madras Public Libraries Act Amendment Committee (AAC) was constituted to suggest amendments to the act.

From the above description it becomes evident that Quality Assurance was not taken care of despite the existence of the Madras Public Libraries Act and rules.

4. SUGGESTIONS

In the light of this background there is an imperative need to revive the demand for National Policy of Library and Information Services of 1986 for the improved library service throughout the country as there is no integrated methodology for the same.

There are three categories for distribution of powers under our constitution. The first category comes under the name of National Library at Calcutta under item 62 out of 96 items under Union List. The second came in the name of libraries named by States under item 12 out of 65 item under the state list. The third comes as books, press and newspapers under item 39 out of 47 items under concurrent list How are these to be integrated? There is a need to bring library and information service and other related matters under the concurrent list. There is also need for the enactment of Union Act for Library and Information systems to coordinate the services under various categories and areas.

5. PROVISIONS OF THE ACT

(*i*) There should be a department of Library and Information Services in the Union and State Territories
(*ii*) These must be headed by library professionals
(*iii*) There must be charged consolidated fund for services
(*iv*) There should be integrated coordination without losing their own identities.
(*v*) It should be reviewed periodically.

It is also suggested that on the lines of the Indian Foreign Service and the Indian Administrative Service, there should be an Indian Library Service to oversee the Library service in the Union and State Governments.

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Quality Management of Scientific Libraries

KEYA BASU

ABSTRACT

The library and information centres play a significant role in information handling and processing, thereby becoming a prominent source of information. The primary objective of TQM in library and information centre is to improve quality service. For successful implementation of TQM we have to improve our resources, infrastructures, services and professionals. TQM invokes consciousness in the minds of the staff to improve service. Library with tall objectives and adequate standards, could contribute to making information society flourish and prosper.

1. INTRODUCTION

Information is the basic need of a nation for its development. In the present era information technology, the strength of a country depends upon its information richness. It helps a nation to cope with the world wide trends and is a vital resource necessary in all walks of life. But information is useful only when it is served in the right form at the right time and for this purpose, proper information management is essential. Libraries and information centres play a significant role in managing and disseminating information. Effective management of these centres help to promote organisational effectiveness by enhancing the the intrinsic values of their collection through efficient delivery system. Total Quality Management (TQM) is a step towards this desired goal.

2. TOTAL QUALITY MANAGEMENT

2.1 Origin and Definition

The concept of Total Quality Management originated in the 1920's when Fredrick W. Taylor published 'The Principles of Scientific Management'. One of the most important development in TQM came up by the emergence of ISO-9000. It provides a guidance for selecting the appropriate conformance standard. Quality management and quality assurance according to vocabularly of ISO-8402:1994- are 'totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs'. In short, if we sum up the quality in most general form is nothing but customer satisfaction or user satisfaction. A library and information centre's quality depends on following factors:

(*a*) Providing error-free information,
(*b*) precision in the provided information,
(*c*) catering information from reliable source,
(*d*) providing exhaustive information,
(*e*) meeting the requirement of the users with right information at the right time with full satisfaction,
(*f*) customisation should be there according to user specifications and
(*g*) the involvement and commitment of every individual to achieve quality.

According to quality management and quality assurance vocabulary ISO 8402:1994 'Total Quality Management approach of an organisation is centered on quality, based on the participation of all its members and aiming at long term success through customer satisfaction, and benefits at all the members of the organization'.

3. MAIN FEATURES OF TQM

- TQM makes the organisation focus on the needs of the customers both internal and external instead of the needs of the organisation.
- It *concentrates* on processes/services on a continual basis rather than being preoccupied with result.
- Total involvement, continuous improvement and leadership commitment.

– TQM is a human relation oriented philosophy. Employees are empowered to work collaboratively in self-directed teams under a unified vision developed jointly with administrators.

4. APPLICATION OF TQM IN SCIENTIFIC LIBRARIES

Application of TQM approach in the context of library and information services is comparatively of recent origin in India. In a scientific library the value added information services are expected to be provided in conformance to the requirements of the users and user satisfaction. The value-added services can be achieved only through adoption of TQM principles in libraries and information centres in our country. For implementation of TQM in library and information centre, the library personnel have to understand the main concepts of TQM and need to be trained in various aspects of this management technique.

5. PROBLEMS IN IMPLEMENTING TQM IN SCIENTIFIC LIBRARIES

In India most of the scientific libraries are being run as government or semi-government organisations and have many problems, which stand in the way of implementing quality assurance. There are several hurdles, which are faced in implementing TQM. These obstacles may be categorised as follows.

5.1 Inadequate Resources

The continued rise in the cost of serials and the resulting cancellation of many subscriptions put pressure on library service/personnel. Exponential information growth and increasing cost of information materials, decreasing budget allocation and increase in user's demand have been forcing libraries to curtail their purchase. Centralised acquisition and accessing information through various on-line networks and as well as Internet are practical solutions to increase the resources. Although it is the desire of every information professional that India too should have an on-line library network such as OCLC, BLAISE etc., yet library automation is not being given necessary priority in several libraries. Computerised library networking will be successful, only when the holdings of all the libraries are available in digital form.

5.2 Inadequate Trained Library Personnel

Many specialised areas have directly or indirectly invaded the library, especially computers, communication technology and management techniques. The impact of all these on the one hand and higher expectations of information conscious user community on the other, demand the librarians to be not only professionally well qualified but also skilled in using information technology and management technique. The professional knowledge acquired through academic qualifications get outdated due to tremendous development in information technology. To overcome this shortcoming and keep abreast of the latest developments there should be periodical training programmes for library professionals. All staff members should be given professional orientation to use the tools of modern information technology available in the library. It is the responsibility of the authorities to send library personnel to attend refresher courses, training programme on computer application and workshop etc. The scientific libraries should be exposed to principles and practices of TQM by their mother organisation.

But often the overtures to acquire new management techniques are not supported by the authorities because of several reasons:

- In most of the cases it is the view of the authority that this is only another management fad of the day,
- *Soft Role Model of Indian Work Culture:* Fruitful implementation of TQM in library and information centre depends on continuous improvement in service, involving everyone in the organisation from superior to subordinate staff in a totally integrated effort towards improving performance at every level. Everyone involved in the library service should be aware of his individual responsibility. Attitude of library professionals has to be changed. Sometimes there is resistance to innovative functions/changes on the part of senior professionals. In library, the people who are working directly with the users, know what really is needed to improve the library service. However, many a time they are unable to bring the problem/ issues to the attention of their superior.
- Sometimes, lack of strong commitment on the part of parent organisation to provide the required support and infrastructure facilities is felt. In certain cases top management is not willing

to share information and power with subordinates. It has been observed in government libraries that the development is lop-sided—the superior authority tries to increase the quantity of data without giving a thought on the quality and infrastructure.

- Quality Management requires a long term investment of time over several years. This may cause resistance and other difficulties in these days of increasing financial crisis.

Inspite of these difficulties, TQM approach in library and information services is an important tool to meet successfully the challenges posed by the following factors.

- complex information needs of users
- interdisciplinary nature of information
- continuing resource constraints
- information explosion
- wide variation in quality and reliability of information.

According to Miller and Steams, the principles of QM, if implemented carefully would yield immense benefits to a library and information centre such as :

- Incremental changes leading to continuous improvement
- Motivates library managers to develop leadership skills to obtain effective results
- Increases staff participation in decision-making
- Improves the level of training given to staff, thus increasing their skills and abilities
- Helps to break down the barriers between library departments and improves communication within the organisation
- Provides a method of improving services to users
- The time taken to provide information services decreases and efficiency increases.

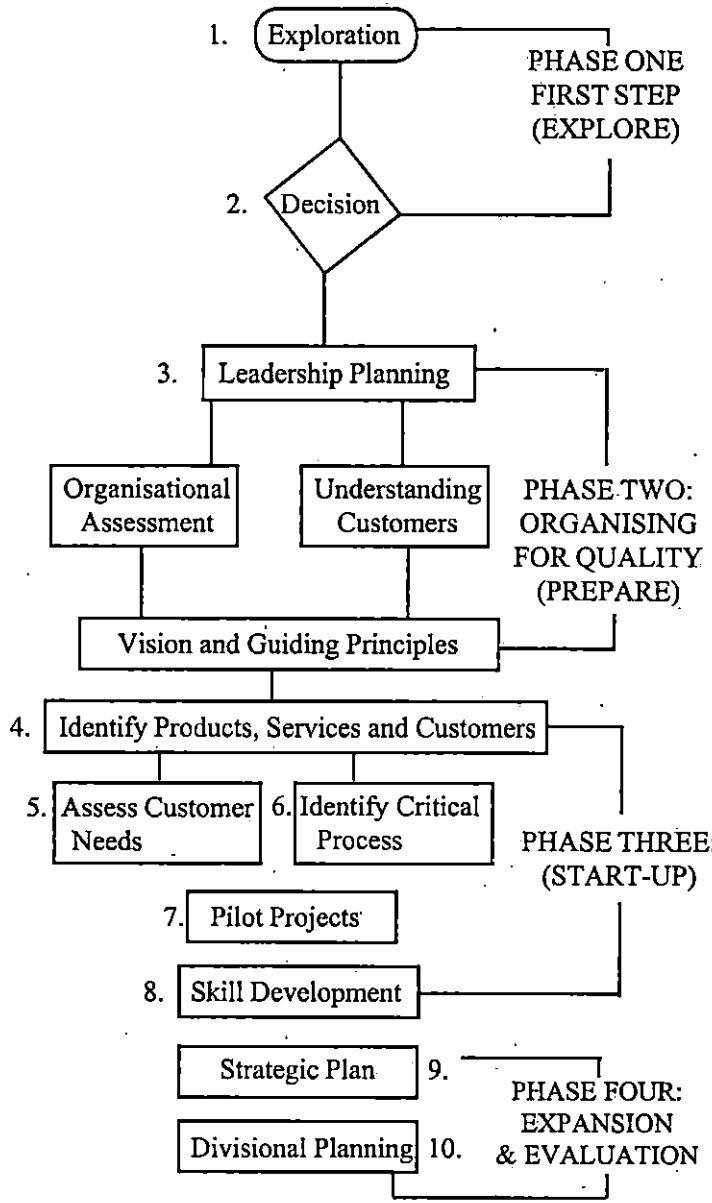
6. SUGGESTIONS

(*a*) A well networked training programme for library professionals working in scientific libraries should be started.

(*b*) The infrastructure facilities available in the scientific libraries should be improved.

(*c*) Knowledge about user needs and commitment to meeting these needs, and ultimately, to exceeding user expectations.

Fig. 1: Total Quality Management Library Implementation Model



(*d*) Management should have a sincere commitment to quality. An appropriate evaluation of quality will reveal the gap between the existing service and the required norms.

A model (Fig. 1) given by Susan B. Barnard may be helpful in implementing TQM in library.

7. CONCLUSION

Quality does not come about by itself. It does not happen by asking people to work harder, by setting goals that encourage improvement, by threatening staffs with loss of jobs, or by rewarding them. Quality results when every individual in the library understands and adopts the philosophy of never-ending improvement and when all the processes of library operations are on the right path. Undertaking TQM is not a matter of pressing a button that starts a series of gears into motion nor it is simply the latest 'management fad', likely to be replaced in a year or so by another technique. Just ask the Japanese who have been pursuing the particular "fad" for fifty years. Being a patient and methodical nation, it is no surprise that during the 1950s the Japanese embraced this philosophy of management and the rest is history.

Providing pin-pointed, exhaustive and expeditious service to the user at the right time by adopting right method/technique should be the ultimate aim of a library and information centre. TQM helps to achieve this aim effectively. For the success of TQM effective training, effective implementation and executive involvement is essential.

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Total Quality Management in Health Libraries

SANGITA GUPTA AND GAURAV KISAN

ABSTRACT

Quality of library services is an area of library activity with rapidly growing importance. The use of quality management systems, procedures and techniques is a recent development, which mirrors the sector-wide interest in both a customer-focused service and definition of what constitutes a quality product. This paper discusses Total Quality Management (TQM), steps to TQM and ways a library might use principles of TQM to enhance library services. It also deals with the actitivities for implementing TQM in libraries.

1. INTRODUCTION

In times of increasing costs and decreasing resources, health libraries are increasingly required to justify their budget allocations and provide the high quality services. This has brought an increased focus on Performance Management and Quality Management in libraries.

Total Quality Management (TQM) is a management philosophy devised by an American W.E. Deming but first embraced by the Japanese. It is a philosophy that focuses relentlessly on the needs of the customer, both internal and external, realigns the organisation from detection to prevention, aims to improve continuously via the use of statistical monitoring (Brockman, 1992).[1]

According to Jurow and Bernard[2] "TQM is a system of continuous improvement employing participative management and centered on the needs of the customer". Key components of TQM are

employee involvement and training, problem solving, teams, statistical methods, long-term goals and thinking, and recognition that the system, not people produces inefficiencies. Libraries can benefit from TQM in three ways; breaking down the inter-departmental barriers; redefining the beneficiaries of library services as internal customers (staff) and external customers (patrons); and reaching a state of continuous improvement.

TQM is based on a number of ideas. It means thinking about quality in terms of all functions of the enterprise and is a start-to-finish process that integrates interrelated functions at all levels. It is a systems approach that considers every interaction between the various elements of the organisation. Thus, the overall effectiveness of the system is higher than the sum of the individual outputs from the subsystems.

The key issues and terminology related to TQM summarised in an International Conference by the Conferences Board in May 1990 are as follows:

- The cost of quality as a measure of non-quality (not meeting customer requirements) and a measure of how the quality process is progressing.
- A cultural change that appreciates the primary needs to meet customer requirements, implements a management philosophy that acknowledges this emphasis, encourages employee involvement, embraces the ethics of continuous improvement.
- Enabling mechanisms of change, including training and education, communication, recognition, management behaviour, teamwork and customer satisfaction programmes.
- Implementing TQM by defining the mission, identifying the output, identifying the customers, negotiating customer requirements, developing a "supplier specification" that details customer objectives, determining the activities required to fulfil those objectives.
- Management behaviour that includes acting as role models, use of quality processes and tools, encouraging communication, sponsoring feedback activities, and fostering and providing a supporting environment.

2. STEPS TO TOTAL QUALITY MANAGEMENT

Based on his work, the Japanese managers, and others, Deming (1986; Walton, 1986)[3] outlined 14 steps through which that managers in any type of organisation can implement a Total Quality Management programme.

(*i*) Create constancy of purpose for improvement of product and service. Constancy of purpose requires innovation, investment in research and education, continuous improvement of product and service, maintenance of equipment, furniture and fixtures, and new aids to production.

(*ii*) Adopt the new philosophy. Management must undergo a transformation and begin to believe in quality products and services.

(*iii*) Cease dependence on mass inspection. Inspect products and services only enough to be able to identify ways to improve the process.

(*iv*) End the practice of awarding business on price tag alone. The lowest priced goods are not always the highest quality; choose a supplier based on its record of improvement and then make a long-term commitment to it.

(*v*) Improve constantly and forever the system of product and service. Improvement is not a one-time effort; management is responsible for leading the organisation into the practice of continual improvement in quality and productivity.

(*vi*) Institute training and retraining. Workers need to know how to do their jobs correctly even if they need to learn new skills.

(*vii*) Institute leadership. Leadership is the job of management. Managers have the responsibility to discover the barriers that prevent staff from taking pride in what they do. The staff will know what those barriers are.

(*viii*) Drive out fear. People often fear reprisal if they make waves at work. Managers need to create an environment where workers can express concerns with confidence.

(*ix*) Break down barriers between staff areas. Managers should promote teamwork by helping staff in different areas/departments work together. Fostering interrelationships among department encourages higher quality decision-making.

(*x*) Eliminate slogans, exhortations, and targets for the workforce.

Using slogans alone, without an investigation into the processes of the workplace, can be offensive to workers because that implies that a better job could be done. Managers need to learn real ways of motivating people in their organisations.

(*xi*) Eliminate numerical quotas. Quotas impede quality more than any other working condition; they leave no room for improvement. Workers need the flexibility to give customers the level of service they need.

(*xii*) Remove barriers to pride of workmanship. Give workers respect and feedback about how they are doing their jobs.

(*xiii*) Institute a vigorous programme of education and retraining. With continuous improvement, job descriptions will change. As a result, employees need to be educated and retrained so that they will be successful at new job responsibilities.

(*xiv*) Take action to accomplish the transformation. Management must work as a team to carry out the previous 13 steps.

Juran[3], was invited to Japan in 1954 by the Union of Japanese Scientists and Engineers and introduced following ten steps for quality improvement:

(*i*) Build awareness of opportunities to improve.
(*ii*) Set goals for improvement.
(*iii*) Organise to reach goals.
(*iv*) Provide training.
(*v*) Carryout projects to solve problems.
(*vi*) Report progress.
(*vii*) Give recognition.
(*viii*) Communicate results.
(*ix*) Keep score
(*x*) Maintain momentum by making annual improvement part of the regular systems and processes of the company.

3. LIBRARY ACTIVITIES & TQM

Quality of library services is an area of library activity that is gaining importance. The use of quality management systems, procedures and techniques is a recent development which mirrors the sector wide interest in both a customer focused service and definition of what constitutes a quality product. Quality can be taken as conformance to

specifications, zero defects, and fitness for purpose. In TQM emphasis on the customer's role in defining quality is particularly strong, here quality is not defined according to the needs of an absolute standard, but in terms of customer's needs.

Many libraries have implemented TQM successfully. Quality of the services provided by the health libraries may also be improved by implementing TQM techniques preferably on a project basis. Health libraries are in the process of automating almost every library task. This is also among other reasons to develop quality of services. It is connected with changes in library performance. There is a need for special attitude for development of new management methods, particularly in libraries.

Realisation of the project means performance of every planned output. It may be achieved by the activities like:

(*i*) Analysis of current position of library's activities—It is needed to analyse the library performance and structure of situation of library, analysis of staff, services and library's collection.

(*ii*) Analysis of customer's needs with the help of customers' surveys.

(*iii*) Preparation of development plans—Plans will be closely connected with problems of library management. Personnel will be trained for TQM as well IT (Information Technology). Training will enable staff to utilise its skills and to become active participant of networking to improve the organisation.

(*iv*) Upgrade personnel knowledge about library quality management.

(*v*) Monitoring of service's quality and preparation of system for user's feedback. This would enable us to make changes during the project to obtain better results.

One of main principles of TQM is to maximise the involvement of every member of library staff to raise quality of library services. It is necessary to make outputs available to every member of library staff. Every planned change will be made to satisfy user's needs. They also should be kept informed about library's new activities and training for them. Library authorities who are decision-makers and also library customers, should be well-informed. After successful realisation of the project, there will be same library but with better management, structure and services.

Sirkin (1993)[6] suggests some ways a library might use the principles of TQM to enhance library services.

- Create service brochures and information kits.
- Conduct a user survey about library services.
- Improve signage
- Change hours of operation
- Provide a more convenient material return
- Simplify checkout of materials
- Use flexibility in staff assignments
- Co-operate with local government
- Ask vendors to give product demonstration
- Give new staff a thorough orientation
- Create inter-departmental library advice groups
- Improve physical layout of the library
- Track complaints
- Develop an active outreach programme
- Open satellite offices
- Publicise new or changed services
- Develop user and staff training materials
- Target services to specific groups
- Offer electronic document delivery
- Follow the mission statement
- Smile

National Documentation Centre of NIHFM also decided to test TQM. A small team from the Stack Maintenance Unit worked with outside facilitators. The team surveyed the present position of shelving in the library and addressed the problem of long lasting shelving backlogs. This team found that shelvers, who worked alone on the floors, felt isolated and unmotivated to make progress. Using this information, the team devised a plan for shelvers to work in small groups and have an assigned floor. The result was an increased *espirit de corps*, tidier shelves and fewer backlogs.

4. POTENTIAL CHALLENGES

While on the one hand TQM has some positive aspect, on the other hand it may also have some potential challenges. Jorow and Barnad (1993)[2] identified four barriers to the adoption of TQM in libraries:

(*i*) *Vocabulary:* Objections to terms such as total, quality and management which imply that high standards are not already being met; (*ii*) *Commitment:* TQM takes several years to implement and requires a long-term commitment by library managers; (*iii*) *Process:* Our culture tends to be impatient and we try to solve problems quickly, contrary to TQM's careful process analysis; and (*iv*) *Professionalisation:* Professional staff can be resistant to turning over their practices and services to what they perceive as the "uninformed whims of the customer". Sirkin (1993)[6] also notes that it is not possible to satisfy everyone's demands; choices will need to be made.

5. CONCLUSION

Libraries are ideal places to implement TQM. They are service organisations dedicated to their customers. By formulating a strategic plan, and following it with a commitment to continuous quality improvement, library managers can transform and improve their organisations.

In health libraries of India total approach to quality management is not yet exploited. There are no local experiences as such, which forces us to use results of TQM implemented in libraries of Western Europe. It will enable us to reach our objectives faster and to disseminate the results of TQM with same proved methodology to other libraries. Although, our experiences are not broad, yet we are well prepared to implement management methods. Most of the health libraries are users of good automated library system which enables them to provide good level services but at the same time the problem is that our old-fashioned organisational structures are not suitable for new technology, as well as there is a lack of IT skills among library personnel. With the implementation of TQM and training of IT efficiency and services of libraries can be improved.

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Total Quality Management in Occupational Health Library

KETKI K. BHATIA

ABSTRACT

Library is the backbone of medical research. The libraries aim at fulfilling the needs of scientists. In the field of occupational health, it is also necessary to fulfil the need of workers, industrial managers, Safety and Welfare Officers. Non-Government organizations (NGOs) etc. as the aims of occupational health are preservation and promotion of health and prevention of disease. The Total Quality Management (TQM), an ongoing concept in all fields like industries, hospitals, hotels, etc. is also applicable in the field of libraries and information services. In this presentation the TQM aspects in Medical Research Institute with reference to occupational health is discussed on user satisfaction, user orientation, automation, human resources development, hygienic condition and public relation in library, including all other quality control aspects.

1. INTRODUCTION

Library is a social institution. Change is the essence of the society, changes in the society effect the role of the librarian as well. The rapid changes occurring in the present day society have some impact on the libraries in terms of acquiring knowledge in all fields that people are interested. For this purpose proper growth and development of libraries is essential and librarians should be able to understand and appreciate these changes.

Library is a centre for reading and source of information and educational materials, for the users of all levels and orientations.

In library context reader or user expects a standard of service in

terms of premises, information available, staff and services offered by the library. In other word the reader expects right information at the right time. To achieve these objectives it is absolutely necessary that quality standards are setup and applied in library services.

The traditional library is unable to meet the increasing multifarious needs of the society. This necessity has given rise to the development of multimedia library, to face challenges of the society through its diversified material including audio-visual aids, techniques, computerisation and online search. The management of the organisation furnishes the library with the needed tools, equipment and facilities to achieve the task of good quality management.

2. WHAT IS QUALITY MANAGEMENT?

Quality in libraries' context is viewed as total satisfaction of the reader's need and expectations in every respect on a continuous basis. The overall quality intention and direction of an organisation as regards quality are formally expressed by top management. Quality management includes strategic planning, allocation of resources and other systematic activities for quality.

Quality management approach necessities that staff of library should work for the readers.The users in a scientific institution are research scientist, postgraduate students of medial sciences and Ph.D. students of biological or engineering subjects.

The function of the library is to help these users to get quality materials of international standards including journals and books, for reference work and library officers should ensure that this material provided to them is of proper standard.

3. TOTAL QUALITY MANAGEMENT

It is new approach to improve service quality and increase user satisfaction by restructuring traditional management practice. In a library it aims at achieving reader's satisfaction with regard to quality, price and delivery.

The Total Quality Management (TQM) requires that following points should be given priority.

3.1 User Satisfaction

The total quality management is to do with the performance of

organisation in meeting user requirement by doing the right thing right, the first time and every time and has to be the best of its kind. A user is more concerned with quality service rather than the library routine work. In Health Science library reference and information services, CAS, SDI all services need to be accurate, because TQM means "better" services not "more" services, and in library for Occupational Health it has to be on the toes, because information should be accurate, timely, quick and up to the mark.

3.2 User Orientation

The TQM is focus on the requirement of user. On the personal front users only go back to library that satisfy their needs. These scientists have set of requirements that must be met by libarians with great interest. They are interested in getting adequate quality reference material. They are dependent on library for quality materials, they come to library to clear their doubts within short period and, gain knowledge that adds to further progress in research. The user deserves the most courteous and attentive treatment from library staff. In Occupational Health library users are to be directed according to their requirements.

3.3 Continuous Improvement

The very fact is that in the Occupational Health, subjects change, depending upon priority problems, and library should improve continuously with these changes. There is a need to maintain the quality of delivered material to user by obtaining from database search and searches through on-line or Internet.

4. HOW TO ACHIEVE TOTAL QUALITY MANAGEMENT?

To obtain quality management, the following approaches are to be implemented or carried out in the library.

4.1 Automation in the Library

Library automation is being applied in all major libraries in India. Libraries are applying information technology to their operations, products and services in order to achieve increased operational efficiency.

Information is now accessible through various electronic media such as disc, tapes, CD-ROM, fax, e-mail, voice mail, video text, e-journals, Internet, etc., international database have been developed and new telecommunication network has been established through, out the world. Now with help of Internet, e-mail, files transfer and remote login librarians can exploit the catalogues, citation databases etc. easily.

a. Change in the attitude of people that library is not mere warehouse or stock room for books but it is a high technology information center managed by professional who are in communication business.

b. The profession will continue to be populated with large number of persons, where change is not engineered as the *modus operandi*. Librarianship changes only thrugh massive programmes of retraining, reorientation and redirection which can help to maintain the value of this most vital resource for the benefit of library and its users.

4.2 Commitment to Lead

Librarian should be committed to lead the library and leaders, administrators, managers must bend to make every effort to assure that the wise and the most talented librarians are allowed to make their contribution to new generation of librarian.

4.3 Periodicals in Library

Periodicals have increased dramatically in this country due to proliferation of scientific research. These titles have increased and their subscription prices have also increased tremendously. A large number of indexing and abstracting journals are there which are too costly to be acquired by each and every library. These trends have raised frustration both in librarians and library users. Selection, acquisition and maintenance of periodicals are very important in library. Resource sharing will help in saving multiple subscriptions, on-line availability of periodicals can eliminated many steps in research process of library listing, storage and retrievals. It is for us, enlightened professionals to outmode practices in order to streamline library process and improve accessibility of valuable contents of periodicals.

4.4 Team Building

Team is a group of people with different background, skills and experience that work together to achieve defined common goals through clear communication and action. Team building is critical element of quality management in library. The key factors in team developing are commitment, trust, purpose and communication involved in process of orientation.

To achieve good team building the requirements are:

- Best recruitment and selection
- Sound organisation structure
- Good administration and organisation
- Proper training of staff
- Good motivation of staff
- Proper management philosophy
- Proper planning and development
- Clear aims in library setup and reasonable rewards.

4.5 Consultation of some expert in specific field for the purchase of books and journals

4.6 Hygienic condition in the library

Arrangement of good sanitation facilities, drinking water, regular dusting of books and journals, proper lighting conditions and ventilation are required. Sitting arrangement preferably to keep a marginal distance between two users.

4.7 Quality Control

This is very important in quality improvement. In quality control a small group of employees from library should meet regularly to identify, analyse and resolve work related to improve quality services.

The philosophy of quality control aims at:

- Contribute to improvement in developed library
- Respect to humanity and building good rapport.
- Create good working conditions whereby moral of workforce remains high continuously.
- Wide discussion with management.
- Training different levels of employees on the concept.
- Structure and operation of quality control system and circulation of literature on quality control.

5. CONCLUSION

Thus proper quality management in library, irrespective of small medium and large library needs the above approaches to satisfy the users and community.

"Quality is never an accident. It is always the result of intelligent effort. There must be the will to produce a superior thing"—John Ruskin.

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TQM in Special Libraries: A Case Study of NCAER

B. RAMESH AND S. BHATTACHARYYA

ABSTRACT

This article is an attempt to search how far the special libraries and information centres implement TQM principle in their activities and NCAER (National Council of Applied Economic Research) library is taken as case study in this context. The infrastructure services and plans are discussed and conclusion is drawn on efficiency in respect of both Total Quality Management and ISO-9000 standards.

1. INTRODUCTION

The concept of Total Quality Management (TQM) was first developed by W. Edward Deming after the second world war for reconstructing Japan's economy. Deming, in particular, introduced data analysis and simple analytical and statistical techniques. The "Plan-Do-Check-Analysis" approach of him urged that everyone learned a common method of deciphering and attacking problems. This commonality is an absolute requirement if personnel from different parts of the same organisation are to work together on organisation development and meet the desired goal. The definition of TQM as contained in the ISO 8402 quality management and quality assurance vocabulary also supports it. It states that TQM is 'a management approach of an organisation, centered on quality based participation of all of its members and aiming at long-term success through customer satisfaction and benefits to the members of the organisation and to society". During 1990s the idea of TQM has taken a new

dimension due to rapid explosion of Information Technology (IT). Nowadays, all the service organisations are interested to implement this principle for maintaining the standard of their products and services libraries and information centres are no exception.

2. CONCEPTUAL ANALYSIS OF 'QUALITY'

Quality in the library world is often used synonymously with excellence. Furthermore, it is also claimed that quality can not be defined or measured precisely, yet managers and users will know it when they see it. Modern quality management theory regards the definition and measurement of quality as an essential prerequisite of proper quality management. In fact, one of the basic principles of quality management is that decision should be based on facts. Normally there are two patterns of quality criteria observed in any organisation. These are:

(*a*) Product quality criteria; and
(*b*) Service quality criteria

2.1 Product Quality Criteria

(*i*) *Performance:* It refers to the primary operating characteristics of a product, may be called as functional performance and usage or actual value, *e.g.* in online database, the basic criteria would include consistency, coverage, timeliness, accuracy and integration with other databases.

(*ii*) *Features:* These are the secondary characteristics that supplement the product's basic functioning.

(*iii*) *Reliability:* It is defined as the probability of products' malfunctioning and failing within a specific period of time. High reliability of an information service means that it provides consistently high performance.

(*iv*) *Durability:* It is a measurement of product life. In library and information centers, it is related with materials such as books, CD-ROM, and the on-line access.

(*v*) *Conformance:* It is related with specifications and standards and also it measures the achievement in respect of irrelevant standards.

(*vi*) *Serviceability:* It means speed, courtesy, competence and ease of repair.

(*vii*) *Aesthetics:* In case of Library, it is that library building, furni-

ture and so forth, are typical cases in which the aesthetic dimension is essential.

(*viii*) *Perceived quality:* This refers to indirect measures of quality.

2.2 Service Quality Criteria

(*i*) *Tangibles:* It means appearance of physical facilities, equipment, personnel and communication materials

(*ii*) *Reliability:* It is the ability to descharge the promised service dependably and accurately

(*iii*) *Responsiveness:* It is willingness to help customers and to provide prompt service

(*iv*) *Assurances:* It is the knowledge and courtesy of employees and their ability to command trust and confidence

(*v*) *Empathy:* It is the caring individualised attention that the organisation provides its customers.

3. ISO-9000

Now, if we can have a look at the certifiable elements stated in ISO 9000 series of quality management and quality assurance standards (Table 1), we will find in all the above features of products and service quality occurrence is there.

Table - 1: Certifiable Elements of ISO-9000

– Management responsibility
– Quality systems
– Contract review
– Design control (not required in ISO 9002, and ISO 9003)
– Document and data control
– Purchasing (not required in ISO 9003)
– Control of customer supplied product
– Product identification and tractability
– Process control (not required in ISO 9003)

Contd.

- Inspection and testing
- Control of inspection, measuring and test equipment
- Inspection and test status
- Control of non-conforming product
- Corrective and preventive action
- Handling, storage, packaging, preservation and delivery
- Control of quality records
- Internal quality audits
- Training
- Servicing (not required ISO 9003)
- Statistical techniques

Now, in this light of quality criteria, we have to carry out a study to find out how far the libraries, particularly the special libraries implement the TQM principles in attaining their goals and NCAER library is taken for case study.

4. NATIONAL COUNCIL OF APPLIED ECONOMIC RESEARCH (NCAER) LIBRARY: A CASE STUDY

The library has a collection of more than 70,000 documents that includes books, reports and back volumes of journals, micro fiche and other micro documents. The library continuously updated its collection through a vigorous acquisition policy. The current annual addition to library is about 1300 documents. The library receives more than 500 journals (including subscribed journals, exchange basis, and free of cost) and 400 working papers annually. A major strength of its collection is government documents. The library has also a collection of maps and microfiche. The library is depositary for publications from the Asian Development Bank (ADB), International Monetary Fund (IMF) and selected publications from the United Nations.

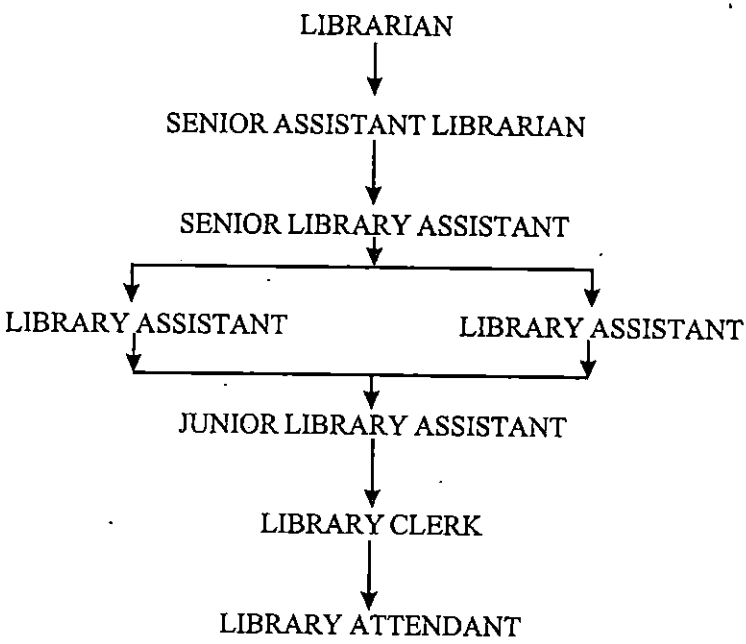


Fig. 1: Organisational Structure of the Library.

4.1 Library Services

Since its inception in 1956, the NCAER library has been serving its research staff and staff and users from outside the Council. The library services are:

- Compilation of bibliographies,
- Reference services,
- Referral services,
- Inter-library loan,
- Reprographic services,
- Literature search,
- Press clippings and
- House keeping activities of a special library.

4.1.1 Databases

The library maintains and continuously updates the following bibliographical databases:

4.1.2 Arthasuchi Database

This database with more than 35,000 bibliographical citations is a major database in the area of Indian Economic Literature and continues to be a major reference sources for researchers at NCAER and user population from the outside. The print version has entered its seventeenth year of publication.

4.1.3 Current Awareness Services in Economics (CASE)

This is a bibliographical database on newspaper articles and news items with more than 45,000 references update daily.

4.1.4 Working Paper Databases

The third database maintained by the library is on working papers received from other national institutions and international institutions. At present, the library receives about 400 working papers from 15 different institutions from all over the world.

Under its "Current Awareness Series," library brings out a "List of Additions" and a "List of Working Papers". These databases are available online for the researchers at the Council. The library has just begun to create a database of all the projects done by the Council so far.

4.3 Modernisation Plan for NCAER Library, 1998–2000

NCAER library has received a major boost through a loan on-behalf of ICICI to update its existing Information and Communication Technology (ICT) to easy access, save time, speed up library operation and increase productivity to serve patrons effectively. The loan also provides for improving the working environment by air-conditioning the library. Provision is also made in the loan to acquire new a comfortable library furniture including study carrels. Availability of funds facilitates to upgrade the modernised and well-furnished library. The following hardware/software were purchased:

(*i*) Personal Computers
(*ii*) Two printers (one Laser, and one Dot matrix)
(*iii*) One CD-Server
(*iv*) Libsys (Library Software Package) for Library Automation
(*v*) One Photocopy machine

At present, the Windows NT version of LIBSYS 3.1 is used as library software package and it facilitates all types of housekeeping activities including acquisition, cataloguing, serial control, Online Public Access Catalogue (OPAC), Union Catalogue and database creation, searching through controlled vocabulary using the Boolean logic (AND, OR, NOT), which helps the user for quickly retrieving the information.

The library also proposes to provide more value-added service to researchers taking advantage of the Internet. The library is also looking for sharing resources by joining DELNET which is a network of important libraries in Delhi so that in-house researchers can have more access in the domain of information.

4.4 Funding for Collection Development

The allocation of funds for library was very less comparatively during 1990–1997. Later the SRTT Budget changed it.

An allocation of funds in different budget heads during the period 1998–2001 is given in the following table.

Table-2: Budget Allocations

Major Heads	*1998–99*	*1999–2000*	*2000–2001*
Annual Journal Subscription	5.53	8.40	9.60
Books Purchase	4.00	5.00	5.50
Electronic Database	2.50	2.75	3.00
Hardware/Software & New Technology	nil	1.50	nil
Staff development training	0.75	0.85	1.00
Retrospective conversion of catalogue cards	1.20	1.60	1.80
Miscellaneous (Binding, Library stationary	0.45	0.50	0.60
Total	14.43	20.6	21.5

Now, we can have a glimpse of collection development process of the last three years from table given below:

Table – 3: Collection Development

Year	*Books*	*Reports*	*Other Documents*	*Total Collection*
1997	21,532	30,938	12,895	65,365
1998	21,703	30,899	13,532	66,134
1999	22,158	31,579	14,113	67,850

It is clearly understood from the above table that after receiving the grant from SRTT fund, the collection development prcess is boosted. The statistics reveals that steady growth in each and every aspects (*e.g.*, books, reports, other documents) of it. We are also using CD, optical disk for our storage purpose. The library is looking for developing a home page so those researchers can easily use the Website.

5. CONCLUSION

It is already revealed from the above study that partially both the aspects of quality management TQM and ISO-9000 quality assurance standardisation can be applicable to libraries. In fact, a quality assurance project aiming at ISO-9000 registration as the first step and consequently categorised as a quality assurance project might well develop into a genuine total quality management application later on. Quality assurance can also be applied to specific information services such as online searching. However, quality management principles have so far successfully been applied only in British Special Libraries and Information Centres. But from the case study of NCAER cited in this article, the motto of the library to bring quality improvement in every aspect of its services and plans and policies is evident.

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Research in Library and Information Science: An Analysis for Future Change

S. KUMAR AND LEENA SHAH

ABSTRACT

The article makes a brief survey of history of Library and Information Science research in India and factors for accelerating LIS research in last two decades. It analyses 381 Ph.D. and D. Litt. degrees in subjects related to Library and Information Science. The analysis includes chronological, university wise and state wise distribution, subject distribution, supervisor distribution, Men-Women ratio for Ph.D. holders and supervisor. Data is presented with tables and graph. Suggests future change in LIS research in the context of impact of new information technology.

1. INTRODUCTION: HISTORICAL PERSPECTIVE

At international level research in LIS does not have a long history. Ph.D. on LIS was first established by Melvil Dewey, the then Director of N.Y. State Library School at Albany in 1891. It was to be an Honorary degree (Honoris Cause) for his conspicuous professional achievements rather than for actual research work. No record is available for grant of this Ph.D. Graduate Library School at University of Chicago in 1926 had provision of earned Ph.D. The first doctorate in LIS was Eleanor S Upton on "A guide to sources of 17th Century English History on selected reports of Royal Commission on Historical Manuscript" in 1930 at Chicago followed by RE Sleven's use of Library Material in Doctoral research at Illinois in 1951.[1] But according to Dr. M. P. Satija[2] first doctoral dissertation was submitted in 1925 by TrichinTai of Iowa State University, USA on "Professional Education for Librarianship." Similarly in U.K. according to Satija it was Ph.D.

on a core subject to LIS by D Sergent. in "Public Library Services under English Local Govt." in 1953 at London School of Economics.

The first UK School of Librarianship was established at the University College, London but Ph.D. provision had to wait till 1960's. In 1963 PG School of Librarianship and Information Science, University of Sheffield was established as a land mark in formal research activity in U.K.[3]

In India, with the advent of Ranganathan in 1924 contributions to LIS began to blossom. A single scholar made multidimensional contributions having to his credit 1500 research papers and 60 books. During his first 25 years he did solo research and in later 20 years he organised team research.[4] He is the recipient of Hon. D.Litt from University of Delhi in 1948 for his outstanding contributions in the field.[5] He was also awarded Honorary D.Litt. by University of Pittsburgh in 1960. He was the first Indian recipient and fourth ever to be honoured by the university including ShaMon; Weaver and Mumford.[6] He made provision for Doctorate in LIS at University of Delhi in 1948. The Delhi University became first university in Commonwealth for this provision .When Dr. Ranganathan was persuing to begin Ph.D. in Library Science, an Executive member of Delhi University commented on his idea "I am afraid tomorrow we may have to award doctorate for dish washing." But the then Vice-Chancellor Sir Maurice Guwyer supported the idea and it was permitted. Today approximately 50 universities in India have provision for the award of Ph.D. degree in LIS.[7]

Though Delhi University is pioneer in LIS research since 1948 the first Ph.D. in Library Science was awarded only in 1957 to D.B. Krishna Rao under the supervision of Dr. Ranganathan. In an allied subject a Ph.D. was awarded before it to Mahendra Nath Basu on Museum methods and the process of cleaning and preservation library presentation by Calcutta University.[8]

No sincere efforts have been made on research in LIS except few studies mainly by PSG Kumar.[9] He has reported 57 Ph.Ds upto 1986, of which thirty two have been awarded in Library Science and fifty seven in allied subjects on topics related to library science. Out of these thirty two, two were awarded by foreign universities. He has also reported that a gap of twenty years emerged between the first and second Ph.D. in Library Science when Dr. S.K. Sharma Pandey was awarded Ph.D. in 1977 by Punjab University under the supervision of Dr. J.S. Sharma. P.S.G. Kumar has analysed that out of 30 Indian

Ph.D's. in Library Science 30% (9) account for Library Classification, 10% (3) for Indexing, 10% (3) for Public libraries and University Libraries only 6.7% (2) degrees were awarded. On topics Academic libraries Bibliometrics, Building, Citation Analysis, Cooperation, Documentation, Librarianship, Literature survey, periodical literature, Reference Tool and Resource sharing only one Ph.D. each were awarded. After this no efforts have been made for similar studies.[10]

2. ANALYSIS

In this study an analysis of 381 Ph.D./D. Litt. degrees in Library and Information Science or on allied subjects has been done. It also includes one D.Litt. degree. These have been analysed into various tables.

2.1 Chronological Distribution

The chronological list of awards have been prepared .The table shows number of awards in each year. For the year 1997–2000 data is collected from ILA news letter.

The table shows steady growth of research degree in this subject. On close observation we can see that between 1983-1990 there has been relatively more positive trend. 91 Ph.D.s have been awarded with an average of 11.5 per year during this period . Before that over a period of 33 years, only 27 Ph.D.'s were awarded in the subject with an average of less then 1 per year. From 1991 trend again changed and during 6 years between 1991-96 as many as 219 awards are made by various universities with an average of 36.5 awards per year. Between 1997–2000 the table shows 44 awards as reported in ILA newsletters. The data is being supplemented.

The Table 1 shows highest number of awards in 1992 (49) followed by 1994 (41) and 1996 (41). 1995 had 36 awards, 1993 had 27 awards and 1991 had 26 awards. Thus between the period 1990-96, it is 61.68% of the total awards recorded in the list. If we consider 338 awards upto 1996, the percentage is as high as 69.73% during the period of 7 years. The other 30.27% awards are in 40 years from 1950-1989.

The analysis by decade shows only 5 awards during 20 years from 1950-69. In the 1970's only 11 awards are reported. The trend changed little with 86 awards in 10 years in 1980's. The blossom came in 1990's with 235 awards during first 6 years from between 1990-96.

Only 44 awards have been listed during 1997-2000 by, ILA Newsletter. An year wise graph from the year 1983 has been given here to show the growth of research awards. The data for 1997-2000 has been shown by dotted lines as it is yet to be supplemented (Fig. 1).

2.2 University-wise Distribution

A university-wise list of research degree awards has been prepared for the purpose. The universities are arranged region wise on uniform geographical tables.[11]

2.2.1 Capital State (Delhi)

The four universities in capital state have produced 23 (6.04%) awards only inspite of the fact that Delhi is pioneer state in starting research programme in LIS. University of Delhi has produced only 18 Ph.D.s in LIS. Delhi (New Delhi) has all potentialities for research work, highest in India. Very large number of library professionals are working there.

2.2.2 North and Eastern India

This region includes universities in U.P. (including Uttarakhand), Bihar (including Vananchal), W. Bengal and Himalayan states. Only 16 universities in this vast region have awarded 65 (17.1%) Ph.D.s in this subject. BHU has produced only 10 awards. Jadavpur University has reported 11 and Manipur University has reported 7 such awards so for.

2.2.3 East and South India

This region includes Orissa, Andhra Pradesh, Tamilnadu and Kerala. The 12 universities in this region have 86 (22.8%) Ph.D. awards in LIS. Madras University, Chennai which has privilege of having Dr. Ranganathan has reported only 6 Ph.Ds. in the subject.

2.2.4 West and South West India

The two states, Maharashtra and Gujrat has produced 32 Ph.D. awards in the subject. Karnataka in this region have awarded 70 Ph.Ds. with 44 awards only by Karnataka University, Dharwar.

2.2.5 Central India

Four universities in Madhya Pradesh and Chattisgarh have awarded 40 Ph.D. awards with domination of Jiwaji University, Gwalior producing 26 awards.

2.2.6 North West India

Five universities of the three states Rajasthan, Haryana, Punjab and Union Territory Chandigarh have produced 32 awards with 22 from Punjab University, Chandigarh alone. Jammu & Kashmir have also produced 5 Ph.D.s in LIS.

With the above study it is clear that there are many states, where such provision is still not available. Besides names of many universities in various states do not figure in the list as they have not started research programme in LIS.

On further close look we can also observe that states like Gujrat, Haryana, Bihar and smaller states of Himalayan region have meager facilities for such programme. LIS research programme is dominated by 5 southern states A.P., Kerala, Karnataka, Tamilnadu and Orissa with 156 awards out of 381 (40.94%). Next follows M.P., Rajasthan, Chandigarh (UT) and Maharashtra. (See table 2). A regional study with facilities for BLISc and MLISc course and proportionate study of research programme can be undertaken as a project to propose plan for future research development.[12]

2.2.7 Rank Order of University

On the analysis of rank order table according to universities, the first rank is of Karnataka University, Dhanvar with 44 (11.5%) Ph.Ds. The next rank is shared by Jiwaji University, Gwalior and University of Rajasthan, Jaipur with 26 (6.8%) Ph.D. awards each. Similarly other ranks have been shown in the table which include 13th ranks occupied by Manipur University, Manipur in the end. The other universities have produced 6 or less Ph.D.s in the subject and are not taken in the list.

2.3 Subject-wise Distribution

For the purpose of analysis the topics of the research have been divided into major groups on the basis of analogy. These have been discussed in the following subheadings: (See Table 4.)

2.3.1 Library Science-General

The general aspects of librarianship, its history and universe of knowledge are grouped in this category, 23 theses (6.02%) have been awarded in this group.

2.3.2 Library Material

This category comprises theses submitted on topics like manuscripts, non-book material, periodicals, patents etc. Only 16 (4.1%) theses have been presented in this category. Out of these 9 have been submitted on various aspects of periodicals.

2.3.3 Library Operations

26 theses on library classification, cataloguing and preservation have been awarded Ph.D. degrees. It amounts to 6.82% only. If we observe the list of theses more carefully it can be noted that in earlier stages library classification was most wanted discipline but later on trend has changed, 17 theses have been submitted on library classification.

2.3.4 Library Service

This comprises 44 theses in the category. It includes Reference services and Bibliography, GAS, SDI, Indexing and Documentation activities.

2.3.5 Modern Technologies

In recent times this is the most favourite subject of research. It includes Information and Communication. 64 theses (16.8%) have been submitted on computer application, information system and network and IT application.

2.3.6 Library Science Profession

40 theses (10.47%) have been submitted on this subject. Library profession in general have 18 theses and 13 on job satisfaction. Only 7 theses have been submitted on library education. If we compare it with research scholars' affiliation, we find that 106 (27.8%) are faculty members but only 7 theses have been submitted on this topic. This is surprising.

2.3.7 Type of Libraries

This is the most favourite area of researchers. 104 (27.3%) theses have been submitted on various types of libraries. Out of 104 theses in this category 52 (50%) belong to university libraries alone.

2.3.8 Users Survey

There are 38 (9.98%) Ph.D. awards in information need and users survey.

2.3.8.1 Bibliometric Study

So far 17 (42%) studies have been made on bibliometric studies.

2.3.8.2 Foreign Libraries

8 (2.1%) Ph.Ds. awards are on foreign libraries, usually by a research scholar from abroad and studied in Indian universities to pursue research in LIS. It does not include Indian scholars obtaining Ph.D. from foreign universities.

2.3.8.3 Library Personalities

One D.Litt. has been done on P.N. Kaula.

2.3.8.4 Rank Order of Subjects

On arranging subjects by rank order by the number of awards in the subject, we find that it is dominated by Ph.D.s on university libraries followed by Information System and Networks. Users survey got IIIrd place followed by Public Libraries and Public Library Movement. The subject once most favourite, 'Library Classification' is at 6th rank. Library Education received interest of only 07 research scholars and got the 11th rank inspite of the fact that 106 (27.8 %) research scholars are faculty members. (See table 5)

2.4 Advisors

In the beginning slow pace of research has been observed due to lack of recognised supervisors and their willingness for supervision. Many universities were adamant to start Ph.D. in Library Science even though they started M.L.I.Sc. in years.

Out of 381 Ph.D's and D.Litt. the list does not provide information regarding advisors for 43 Ph.Ds.

Out of remaining 338, Ph.D. by 136 advisors, the trend shows that 75 (55.1%) advisors have guided one Ph.D. 20 (14.7%) advisors have guided 2 Ph.Ds. Wheras, 3 Ph.Ds. have been supervised by 18 (13.2%) guides. More then 3 but upto 7 Ph.Ds. have been supervised by 12 (8.8%) guides. On the other hand 11 (8.0 %) guides have supervised more then 8 Ph.Ds. In all there are 136 advisors in the list. (See table 6.)

On close examination of the list, it is noted that Dr. C.R. Karidappa had topped the list by supervising 16 Ph.Ds. followed by S.R.Gunjal

with 14 Ph.Ds. followed by S.M. Tripathi with 10 Ph.Ds. Dr. Tripathi has a record of working as co-supervisor with 8 guides. M. R. Kambhar follows with 10 Ph.Ds.

A few guides have supervised in more then one university owing to, either because of change of university or after getting recognition from other universities as supervisor.

The rank order table shows 75 supervisors have guided one Ph.D. on top followed by 20 supervisors guiding 2 Ph.D.s. Next follows 3 Ph.D.s by 18 Guides. On 11th rank 8 or more Ph.D.s have been supervised by 11 guides. The last is 1 Ph.D. by 2 supervisors.

On another close analysis of the index, it is found that out of 136 advisors from the list only 40 advisors appear in the list of research scholars. It means they have obtained Ph.D. in LIS or on allied topics. But remaining 96 advisors have either not done a Ph.D. or have done Ph.D. in a subject other then LIS or allied topics, thus working as supervisor by virtue of their experience and position in the university. A few supervisors have obtained Ph.D. in LIS from foreign universities and are not included in this list.

Sex Ratio

The list includes only 5 (3.7%) female advisors and 53 (13.9%) women research scholars obtaining Ph.D. degrees.

2.5 Affiliation of Ph.D. Holders

The table shows that data of 231 research scholars is available with regard to affiliation of Ph.D. holders, 150 left out cases may be either fresh students or might have not provided the information. It also means that 231 Ph.D. holders are working professionals at the time of award of Ph.D. degrees. This ratio may be higher than in many other subjects because it is a professional course and Ph.D. in the subject started very late.

The analysis shows that on top 106 (45.9 %) Ph.D.s holders belong to faculty in various universities. On second place special library staff with 58 (25.1%) have done Ph.D. Third place is occupied by university librarians/staff members, fourth place have been achieved by college librarians with 19 Ph.Ds. Public librarians have taken least interest and only 2 are listed in the index. Data for 150 Ph.Ds. is not available. (See Table 7.)

3. CONCLUSION

On the basis of above analysis it is evident that research work leading to Ph.D. degree is not pursued at a full swing even after 50 years of LIS education in India. Though it has geared up in 1980s and 1990s. There is lack of supervisors and lack of interest among candidates may be because of less demand of library professionals. Infrastructural facilities also fail to attract more candidates. Financial support is also not available easily. Only very few candidates pass Junior Research Fellowship Examination of UGC to get financial support. More financial aid and scholarships should be made available to encourage research in this discipline. Many a time working professional do not get time to complete research and incentives are also not many, especially in special and public libraries. More fresh candidates must be attracted to give impetus to the LIS research by way of providing financial help and scholarship at local level by the universities. Infrastructural facilities should also be augmented for the purpose. New job opportunities should be opened for LIS professionals to attract more scholars. A study of MLISc. pass out candidates should be conducted in various universities to know their difficulties in this regard.

It has been noted that after completing MLISc. Job is the first priority than Ph.D. because even after completing Ph.D., a job is not assured. For university and college librarianship and for teaching jobs, which has highest job potential NET exam of UGC is a must so priority to clear NET is on top by fresh candidates than pursuing Ph.D. degree.

With the increase in number, there are genuine concerns over poor quality of research. According to Mr. Satija[13] decline in quality has been constant and at times rapid. Prof. Mangala[14] comments on this issue "Research component of LIS schools in India in general has been quite poor." Mrs. Motivale[15] said "Ph.D. degrees are being awarded on topics not worthy of even BLISc assignments. She further comments "Every research may be capable of earning Ph.D. degree but every Ph.D. thesis can not be piece of research."

The factors behind the poor quality may be mushroom growth of LIS schools, lack of infrastructure facilities, small size of faculty heavy work-load and unhealthy competition to produce more number of Ph.Ds.

To sum up following problems can be considered in LIS research in India.

(*i*) Lack of quality supervisors.
(*ii*) Lack of infrastructural facilities.
(*iii*) Lack of mancial support to candidates.
(*iv*) Lack of incentives for research.
(*v*) Unhealthy competition to increase number of awards/registered candidate.
(*vi*) Prevailing malpractice in Ph.D. awards.
(*vii*) Lack of a central agency to control and evaluate research.
(*viii*) Lack of M.Phil courses.
(*ix*) Discontinued practice of research projects at MLISc level.
(*x*) Proper bibliographical control of research.

4. SUGGESTIONS

On the basis of the study and observations and experience, following suggestions can be made beside suggestions like more infrastructural facilities, more funds, more incentives, etc.

4.1 Central Agency

Before any accrediation council or any legislative body is duly constituted, there should be atleast a central agency, a registered society to monitor researches in LIS. Research in LIS is still in infant stage and it is not too late to make a beginning. ILA / IATLIS can join together for such an agency having President and Secretary and three eminent supervisors and a research candidate as members. A body may be registered under Registration of Society Act. It may be "Association of Research Scholars and Supervisors in LIS, "ARSSLIS" with a lifetime subscription of Rs. 500-1000 to meet the expenses. An annual meeting/conference may be held inviting research papers on Ph.D. topics. It should have a permanent headquarter.

4.2 Willingness to Participate

All professional departments in LIS should he willing to participate. It should be obligatory on the part of each department to cooperate with the central agency say ARSSLIS. It must be compulsory to get membership of the association by every candidate and supervisor.

4.3 Bibliographical Control

All details of LIS research must be available to the agency as soon a Ph.D. is awarded or a Ph.D. is registered. It may be made available on internet by having its own website.

4.4 Research Registration

Before the registration for Ph.D., it should be compulsory (as an obligation) to receive consent of the body so constituted. It will avoid any duplication of research and help in enhancing quality of research. Guidance regarding topics may also be provided. A nominal fee of Rs. 100-200 may be charged for each registration to meet the cost of office work.

4.5 Publication of Research Abstract

Abstracts of all Ph.D. awards must be published in a publication, may be a periodical/research bulletin, to be started by the cooperative body/ society so constituted. A fee of Rs. 300/- may be charged for each publicaiton and a copy of that journal/bulletin may be supplied to the candidate and supervisor. It may be also be made available on website.

4.6 Marketing of Research Journal

It must be compulsory to subscribe to this journal by every school of LIS. This should be brought by the agency so constituted.

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Table 1A.: Chronological List of Research Degree Awards in LIS Subject

S.No.	Year	No. of Awards	S.No.	Year	No. of Awards
1.	1950	1	16.	1986	10
2.	1957	2	17.	1987	9
3.	1963	1	18.	1988	9
4.	1966	1	19.	1989	13
5.	1972	2	20.	1990	16
6.	1973	1	21.	1991	26
7.	1977	4	22.	1992	49
8.	1978	2	23.	1993	26
9.	1979	2	24.	1994	41
10.	1980	4	25.	1995	36
11.	1981	4	26.	1996	41
12.	1982	3	27.	1997	9*
13.	1983	11	28.	1998	12*
14.	1984	12	29.	1999	14*
15.	1985	11	30.	2000	9*
				Total	381

*As reported in ILA Newsletter

Table 1B. : Research Awards: Decade-wise Distribution

Decade	Awards	%
1950s & 1960s	5	1.31
1970s	11	2.89
1980s	86	22.16
1990-96	235	61.68
1997-99	35*	-
2000	9*	-
Total	3	100.00

*As reported in ILA Newsletter

Table 2: State Wise Distribution of University Awarding Ph.D. in LIS

S. No.	*Statewise University*	*No. of Ph.D.*	*Total*
1.	**Delhi**		23
	11 Delhi	18	
	12 IIT	2	
	13 JNU	2	
	14 Jamia	1	
2.	**N.E. & E. India**		
	21 U.P.		15
	211 Agra	2	
	212 AMU	1	
	213 BHU	10	
	214 Allahabad	1	
	215 Lucknow	1	
	22 BIHAR		10
	221 Bhagalpur	4	
	222 LNMU	2	
	223 Patna	1	
	224 Ranch	3	
	23 W. Bengal		24
	231 Vurdwan	11	
	232 Bharti Darshan	1	
	233 Calcutta	5	
	234 Jadhavpur	6	
	235 Vidhyasagar	1	
	24 Himalayan States		16
	241 Gouati	6	
	242 Manipur	7	
	243 NEHU	3	
3	**S.E. & INDIA**		
	31 ORISSA		24
	311 Bahrampur	6	
	312 Sambalpur	6	
	313 Utkal	12	
	32 Andhra Pradesh		38
	321 Andhra Uni.	23	
	322 Mahila Uni.	1	
	323 Osmania	8	
	324 SVU	6	
	33 Tamil Nadu		9
	331 Annamalai	1	
	332 Madras	6	
	332 Madras	6	
	333 Madurai	2	
	34 Kerala		15
	341 Calicut	6	
	342 Kerla	9	
4	**S.W. & W. INDIA**		
	41 Karnataka		70
	411 Banglore	5	
	412 Gulberga	15	
	413 Karnaataka	44	
	414 Mysore	6	
	42 Maharashtra		28
	421 Amravati	1	
	422 Kolhapur	1	
	432 Nagpur	6	
	424 Poona	19	
	425 SNDT	1	
	43 Gujrat		4
	431 MSU	2	
	432 SPU	1	
	433 Gujrat	1	
5	**Central India**		
	51 Madhya Pradesh		40
	511 Jiwaji	26	
	512 RSU	03	
	513 Sagar	02	
	514 Ujjain	09	
6	**N.W. India**		
	61 Rajasthan		27
	611 Jaipur	26	
	612 Kota Open	1	
	62 Hariyana		2
	621 Kurukshetra	1	
	622 MDU	1	
	63 Punjab & UT		30
	631 Punjab	22	
	632 GND	5	
	633 Punjabi	3	
7	**N. India**		5
	71 J & K	5	
	No Information	5	5
	Total		381

Table 3: Rank Order of Universities Awarding Ph.D. in LIS

Rank	*Name of the University*	*No. of Award*
1.	Karnataka University, Dharwar (Karnataka)	44
2a	Jiwaji University, Gwalior (M.P.)	26
2b	University of Rajasthan, Jaipur (Rajasthan)	26
3.	Andhra University, Waltair	23
4.	Punjab University, Chandigarh (UT)	22
5.	University of Poona, Pune (Maharashtra)	19
6.	University of Delhi, Delhi	18
7.	Gulberga University Gulberga (Karnataka)	15
8.	Utkal University Bhubaneshwar (Orissa)	12
9.	University of Burdwan (W. Bengal)	11
10.	B.H.U., Varanasi	10
11a	Vikram University, Ujjain (M.P.)	9
11b	University of Kerala, Trivandrum	9
12.	Osmania University, Hyderabad	8
13.	Manipur University, Imphal	7

Table 4: Subject Distribution of Ph.D in LIS

S.No.	*Subject*	*No. of Ph.D*	*Total*	*%*
1.	*Librarianship in General*			
	[11] Universe of knowlege	8		
	[12] LIS-General	7		
	[13] Library History	8	**23**	6.0
2.	*Material*			
	[21] Manuscript	3		
	[22] Non-book	2		
	[23] Periodicals	9		
	[24] Patents	1		
	[25] Children Literature	1	**16**	21
3.	*Library Operation*			
	[31] Classifcation	17		
	[32] Cataloguing	6		
	[33] Preservation	3	**26**	6.82

Contd.

S.No.	Subject	No. of Ph.D	Total	%
4.	*Library Service*			
	[41] Ref. Sources & Services, Bibliographies	17		
	[42] CAS, SDI, Indexing & Dec. Activities	25		
	[43] Marketing	2	**44**	11.5
5.	*Modern Technology*			
	[51] Inf. & Communicatoin	8		
	[52] Inf. System & Network	48		
	[53] I.T. Application & Computer	8	**64**	16.8
6.	*Profession & Education*			
	[61] Lib. Professions	18		
	[62] Lib. Association	2		
	[63] Job Satisfaction	13		
	[64] Library Education	7	**40**	10.5
7.	*Types of Libraries*			
	[71] Special Libraries	17		
	[72] University Libraries	52		
	[73] Public Libraries	25		
	[74] Public Library Movement	10	**104**	27.3
8.	*User's Survey*			
	[81] Information Need	38	**38**	10.0
9.	*Others*			
	[91] Bibliomatric Study	17		
	[92] Foreign Topics	8		
	[93] Biographical Work	1	**26**	6.82
		Total	**381**	100

Table 5: Rank Order Subject Wise

S. No.	*Subject*	*No. of Ph.D.*	*Cummulative*	*%*
1.	University Libraries	52	52	13.60
2.	User's System & Netowk	48	100	12.60
3.	User's Survey & Information Need	38	138	0.990
4.	Public Library System & Movement	35	173	09.10
5.	CAS, SDI & Indexing	25	198	06.50
6.	Library Profession	18	216	04.70
7a.	Bibliometrics	17	233	04.40
7b	Library Classification	17	250	04.40
7c	Special Libraries	17	284	04.40
7d	Reference Sources & Bibliographies	17	284	04.40
8	Job Satisfaction	13	297	03.40
9.	Periodicals	9	306	02.30
10a	Information & Communication	8	314	02.00
10b	Universe of Knowledge	8	322	02.00
10c	Library History	8	330	02.00
10d	Foreign Libraries	8	338	02.00
10e	Information technology	8	346	02.00
11a	Library Education	7	353	01.80
11b	Library Science	7	360	01.80
12	Cataloguing	6	366	01.60
13a	Preservation	3	369	00.70
13b	Manuscripts	3	372	00.70
14a	Non-book material	2	374	00.05
14b	Library Association	2	376	00.05
14c	Marketing	2	378	00.05
15a	Patent	1	379	00.02
15b	Children Literature	1	380	00.02
15c	Personality	1	381	00.02

Table 6: Advisors Index: Rank Order

sRank	*Ph.D.*	*Advisors*	*%*	*Cummulative*
1st	1	175	55.10	075
2nd	2	20	14.70	095
3rd	3	18	13.20	113
4th	8	11	08.00	124
5th	7	5	03.60	129
6th	4	3	02.70	132
7th	6	2	01.40	134
8th	5	2	01.40	136

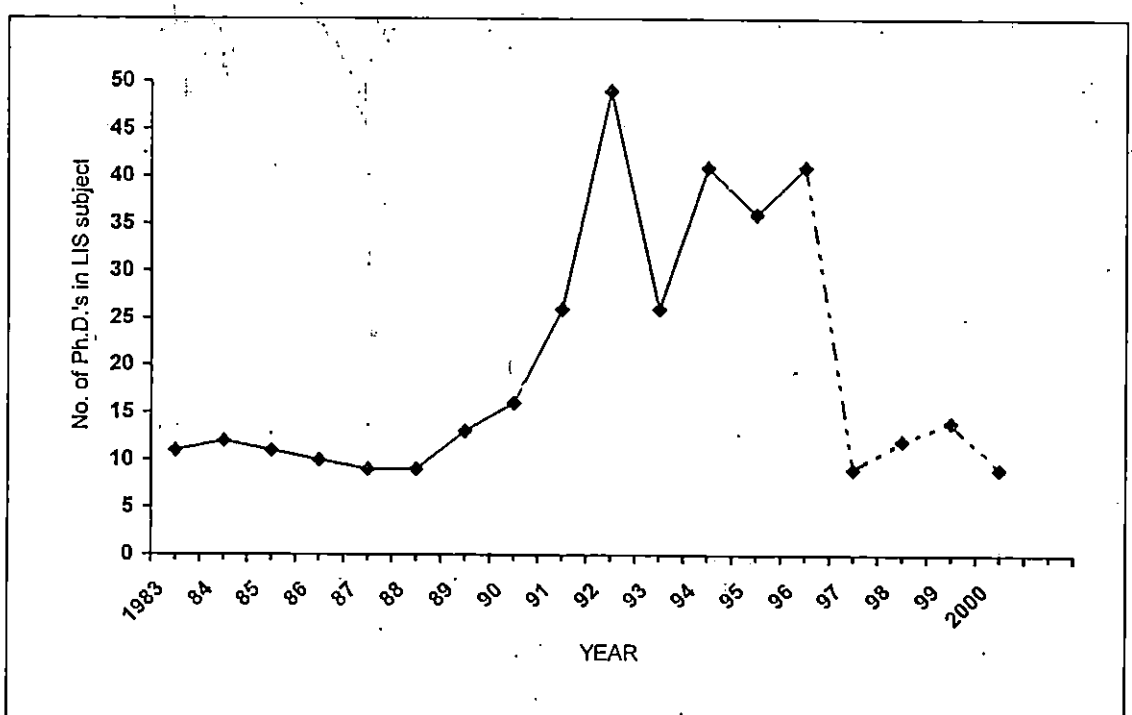
*50 Ph.D. do not provide advisor's name.

Table 7: Affiliation of Ph.D Holders: Rank Order

Rank	*Affiation*	*No. of Scholars*	*Cumulative*	*%*
1st	Teaching/Faculty	106	106	45.9
2nd	Special Libraries	58	164	25.1
3rd	University Libraries	46	210	19.9
4th	College Libraries	19	229	08.2
5th	Public Libraries	02	231	00.8
6th	No Information/Not working	150	381	39.3
	TOTAL	381	381	100

*150 Research Scholars did not mention affilations.

Fig. Year wise Distribution of Ph.D.'s in LIS



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Qualitative Research in Library and Information Science

G. DEVARAJAN

ABSTRACT

The paper outlines the current state of affairs in research is LIS carried out by universities in India. It brings out the reasons for deterioration of quality in research. Suggest steps for improving the quality of research in the LIS field. These include workshops for research guides and researches, grading in evaluation, involvement of foreign adjudicators, hosting research output on Internet, and research audit.

1. INTRODUCTION

The major objectives of a university are teaching, publication and extension activities. All these functions are interrelated and helpful in achieving successful development and rating of universities. Of these, research is the core function, which radiates and influences the other objectives of a university.

Withelm von Humboldt, the German thinker, recognised the importance of research in universities. The concept of "Research University" was initiated with the founding of Berlin University in 1810. This concept found fulfilment in the American research oriented universities like John Hopkins, Stanford and Berkeley.

Research in Indian universities at an organised level was started only after Independence. Now all universities undertake academic research leading to degrees such as PhD, MLitt and DLitt. There is much apprehension among educationists and others concerned with

research and development in India whether the quality of research is maintained in the true sense of the term.

Quality research is a relative concept. How should the quality of research determined or measured is now a topic of discussion and great concern in academic circles. It is a grim fact that the quality of research is declining especially in university level research. It is indeed essential that the research output should be capable of developing theoretical foundation of the subject and it should contain suggestions on how to solve problems relating to the subject in the contemporary society and for all-round societal development. But most of the university level researches in India have become more or less rituals and mere academic exercises. Who is responsible for this situation? Researchers, research guides university authorities the Government? We cannot attribute the blame to any of them because to some extent all of them are responsible for this state of affairs. The decline in quality research is due to a number of interrelated factors. The main factor may be the resource crunch in the field of higher education, especially in Third World countries as pointed out in the World Education Report (1998). Of course, it is high time to examine with open mind how to improve the quality of research within the parameters and by fully exploiting existing infrastructure and other resources available in our universities. It is needless to state that revamping of research is imperative and it is more significant especially in the era of information technology and for a society rapidly moving towards what is called information society. Attempts can be made to improve the quality of research in the area of library and information science in our universities. Of course, there is no single way. Immediate attention is imperative for the qualitative improvement of research in library and information science.

2. TENETS FOR QUALITATIVE RESEARCH

Attention in the following areas may be considered for an effective and meaningful research in library and information science in Indian universities..

2.1 Conduct for Periodical Workshops to Research Guides and Researchers

Separate workshops may be conducted in all universities in India for

research students as well as research guides. The course content of the workshop should include topics like: (*a*) Literature search which includes manual literature search, CD-ROM information search, online information search and Internet search; (*b*) Technical writing—modern techniques in preparing theses and dissertations; introduction to various style manuals; evaluation of research reports etc.; and (*c*) Application of statistical techniques in data analysis. The period of workshop can be one to two weeks and this may be conducted periodically, based on the requirements of research registrants.

2.2 Qualifying Examination

A qualifying examination may be conducted for research students when they complete one year after registration. There can be two examination papers of 3 hours duration. Each paper carries 100 marks. The papers may be on (*i*) literature search and technical writing; and (*ii*) research methodology and statistical methods. Questions should be framed in such a way that it is easy to ascertain the real aptitude of the researcher. Students who secure 60 per cent minimum marks only may be permitted to continue research.

2.3 Grading System in Evaluation

In the evaluation of thesis grading system may be introduced. While recommending for awarding Ph.D. or other research degrees the system of grading A, B, C etc. can be followed. This can be recorded in the degree certificate so that it will serve as a motivation for researchers as well as research guides and make them more conscious towards improving the quality of their work.

2.4 Identification of Thrust Areas of Research

Research committee in each library and information science department should prepare a list of research topics in library and information science as thrust areas, which have theoretical, practical and social relevance and contemporary significance. The selections of topic from this list will avoid repetitive and parallel researches and pave way for relay research.

2.5 Infrastructure

Adequate infrastructure such as laboratory, library, manpower and physical facilities are necessary for quality research. To ensure this a

committee in each department or the research committee in each university should examine these aspects periodically in detail, objectivity and without bias.

2.6 Databases on Research

Each university should take steps for the creation of two databases, *viz.* (*i*) research already completed and degree awarded; and (*ii*) research in progress in each university. This will avoid duplication of research and repetitive research among universities and give way for productive research.

2.7 Foreign Adjudicators

In earlier days most of the universities in India used to engage foreign adjudicators for valuation of theses. But now most of the universities have dispensed with foreign examiners due to delay in getting back the report duly evaluated. Delay in getting the report is not a problem today because of the advent of information technology. The authorities may be willing to accept e-mail report and digital signature of the adjudicator. The foreign examiners by and large will evaluate theses objectively and without any bias. But if we depend only on Indian evaluators we cannot expect an evaluated report without bias. Today, in most of cases the evaluation is done more or less on a mutual agreement among guides. This has lead to decline in the quality of research. Hence inclusion of at least one foreign evaluator in the panel of adjudicators for valuation is necessary.

2.8 Awards to Research Guides and Researchers

Each university may institute awards to research guides and to researchers on the basis of research output. This can be made every year on the basis of research output assessed by an expert committee constituted by the respective university.

2.9 Research Output on Internet

The research output of each university may be brought under the Internet by creating website. The bibliographical information about the theses along with informative abstract of each thesis should be made available to the Internet users at the global level.

2.10 Research Audit

Every university should undertake periodical research audit by engaging experts. External members from other universities may be appointed in order to make an impartial audit of the research output of a university.

3. GUIDELINES FOR QUALITY RESEARCH

On the basis of the above discussions some of the general guidelines are given under for the qualitative improvement of research in library and information science.

(*i*) The selection of candidates for PhD research should be restricted to allow only those with the requisite competence and research aptitude.

(*ii*) The choice of the research topic should be done by the candidate himself, the role of the guide in this matter being limited to rendering necessary advice. It would be useful in this connection if the research committee maintains a list of relevant topics for research.

(*iii*) Duplication of research at all levels—global, national and local—should be avoided. For this purpose existing bibliographical compilations of theses and dissertations like "Dissertations Abstracts International" and "Lists of PhD. Theses accepted by Indian Universities" published in *University News* of the Association of Indian Universities and *ICSSR Bulletin* of the Indian Council of Social Science Research. These should be consulted by research scholars before the finalisation of their research topics. Besides, each university should maintain a machinereadable database of both the PhD theses accepted and the on-going research programmes. The INFLIBNET project of the UGC should maintain a similar database covering all the universities and university level institutions in the country.

(*iv*) The role of the research guide in ensuring quality research is most significant. He must agree to guide only those candidates who choose topics falling within the area of his specialisation and interest. He must frequently interact with his research students and render them all help and assistance in the fruitful

pursuit of research leading to results, which would constitute an original contribution in the field. He must also satisfy himself with the authenticity of the materials consulted and cited in the thesis.

(*v*) Each research scholar should prepare a research proposal, which should (*a*) define the topic of research and trace its development on the basis of literature survey, (*b*) state the major purposes of the study, (*c*) explain the scope and significance of the study, (*d*) state the hypotheses around which the research should be centered and (*e*) indicate the plan for the presentation of the matter in the different chapters of the thesis. In short the research proposal should be as complete and precise a research map as possible, capable of guiding the researcher along the right track at all stages of his research work.

(*vi*) The guide should periodically assess and monitor the progress of research of his research students and take prompt corrective action to prevent slackness and mistakes.

(*vii*) Norms should be prescribed for the presentation of data, tables, figures etc in the theses and all statements made should be supported by factual and documentary evidence.

(*viii*) The language of the theses should be simple, straight and free from mistakes and the presentation of matter clear, logical and coherent. An index to the content of a thesis is highly desirable.

4. CONCLUSION

The intelligent use of information tools in transforming higher education requires that there should be changes in the concept and approaches to the present day research. In the national policy on education document it is observed, "in the context of unprecedented explosion of knowledge, higher education has to become dynamic as never before, constantly entering uncharted areas". It may be presumed that globalisation would discharge repetitive research and encourage research workers to become more participative and collaborative with their peers working elsewhere. The application of IT will help in the selection of research topics and will avoid duplication of research and spending of time unnecessary for literature survey. The universities

in India should become aware of the immense possibilities of IT in rejuvenating and improving the quality of research. If we hesitate to take timely action in this regard we will lag far behind in the quality of research. An earnest effort is imperative from researchers, research guides and university authorities to improve the quality of research as part of TQM in higher education in general and library and information science research in particular.

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Quality of Library and Information Science Research in India*

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ABSTRACT

This article examines the existing conditions of research in LIS in India and suggests Total Quality Management (TQM) as the effective remedy for improvement. In this context, it may be observed that the concept of TQM has been examined and successfully implemented in library services. Yet, its implications have not been explored in the context of library and information research.

1. INTRODUCTION

India has been fortunate to have such visionaries like Dr. S.R. Ranganathan who took lead in establishing the formal library science schools in the country, for imparting education in library science. Though Diploma courses in Library Science (renamed Bachelor of Library Science afterwards) came earlier to Dr Ranganathan, they remained localised affair in imparting training skills in managing the libraries. During 1930s, Dr. Ranganathan started diploma course on scientific lines, at the University of Madras. Yet, the doctoral programme in the subject was a very late starter. Its provision was made in the University of Delhi in 1951.[1] However, Mannindranath Basu became the first librarian to earn a Ph.D. degree from Calcutta University in 1950[2]. He was registered for a library science topic probably in some other discipline. The first person to obtain doctorate from the University of Delhi was D.B. Krishna Rao in 1957.[3]

*The findings and views reported in this research article are exclusively of the author and not of the organization/institution where he is presently serving.

Dr. Krishna Rao has remained the sole Ph.D. earner under Dr. Ranganathan. After Ranganathan's departure from Delhi, Ph.D. programme at the University of Delhi became defunct for almost two decades. At the Documentation Research and Training Centre (DRTC), Bangalore where Dr S.R. Ranganathan remained in the last years of his life, emphasis on team research rather than on individual based research was laid. After the demise of Dr. Ranganathan, almost all the faculty members of the DRTC earned doctorates from other universities on the work going on in the DRTC.[4] Strangely, DRTC still does not have the provision for Ph.D. programme.

Jagdish Saran Sharma was one among the early few persons to obtain a doctorate from the University of Michigan in the United States in 1954. The title of his work was "Mahatma Gandhi: A descriptive bibliography". This work was published afterwards. While at the Panjab University, Chandigarh, he gave lead in supervising doctoral research and in this way, in 1977 after a gap of about 20 years Dr. Pandey, S.K Sharma was awarded Ph.D.[5] Thereafter, some other library science professionals earned doctorates. Thus, Panjab University became the focal point for providing facilities, under the guidance of Dr. Jagdish Saran Sharma, then the University Librarian and Professor there. In 80s and 90s, several other universities and institutions started the doctoral research programme. As on date, about 400 library science professionals have been awarded Ph.D. degree. In addition, two persons earned D.Litt. – one from the Vikram University, Ujjain and the other from the Agra University.

In addition to the above chronology, few library science professionals during 60s and 70s carried their research in other related disciplines also. Economics, history, law, literature, management, psychology, sociology, etc. were some of such subjects. Now, the research facilities are available in thirty four universities in the country though more than fifty universities and institutions have so far awarded Ph.D. in Library and Information Science.[6]

2. QUALITY OF RESEARCH OUTPUT IN THESES

By going through the list of the doctoral theses and the text of many approved theses, following observations are made:

(*i*) Majority of the subjects chosen are traditional. Survey method

of the state-of-the-art appears very popular.[7] Similarly, bibliometrics, university libraries, library use and user study and information services are the next popular ones.

(*ii*) Several theses are on nearly identical or overlapping themes. The subject treatment including findings of these works are almost common. For instance, information seeking/gathering behaviour has been the subject of 8 researchers;

(*iii*) Several institutions not having any facility of imparting education in library science even at the under-graduate level are strangely awarding Ph.D. Similarly, some universities not having the provision for the Masters degree are following the similar lines.

(*iv*) Most of the universities offering Ph.D. registration are very poor in resources.[8] For instance, in many cases, not even 10% of journals cited in the theses are subscribed or received.

(*v*) The quality of the students entering into the doctoral programme in the country is poor. There is hardly any intrinsic merit in their work. However, with the opening of higher positions in the country, the situation is now gradually improving to a large extent.

(*vi*) The professors supervising the research are casual in the progress of the works being guided by them. They hardly devote any time in the research. In fact, many qualified teachers and librarians are not available to supervise research.[9]

(*vii*) In a large number of the cases, a clear message as to the findings of the work, has remained confusing, or even missing and yet Ph.D. degrees are being conferred.

(*viii*) To a large extent, utility of the subject matter has been ignored. Practical problems being faced by the librarians have not been considered seriously.[10]

(*ix*) Communication in many theses is poor. Even contradictory statements and the grammatical aspects have not been viewed seriously.

(*x*) There is no uniformity in the style of presentation. Perhaps, it is because no written instructions or guidelines are available to the students in most of the universities.

(*xi*) In many instances, Ph.D. theses are just the extension work of the M.L.I.Sc. dissertations. Thus, most of the research works appear to be just long essays.

(*xi*) The quality of the theses is quite inadequate. It is because the research programmes in different universities were introduced and expanded mindlessly[11] without augmenting the basic infrastructure.

(*xii*) It appears that in a vast majority of the cases, the intention is only to earn the degree. Their contribution to the knowledge is negligible.

The observations given above have brought out one message very clearly, that research output in library and information science in India has not been able to come near to the mission of the programme. There are several reasons for such a failure described as under:

(*i*) The formal method of teaching in the library science schools at the Bachelor and Masters' level, is a traditional one, and is not oriented to the research.[12] Though some universities have recently started M.Phil. degree, its potential is yet to be assessed.

(*ii*) Teachers in general are not enthusiastic in using library resources. This is evident from the poor quality research being produced by them.

(*iii*) Many teachers falsely believe that their job is limited only to teaching. Carrying or guiding research is not their responsibility. Yet, some teachers complain of the enormous classroom teaching load they are carrying.

(*iv*) Intake into the doctoral programme is based on the choice of the supervisors. There is hardly any assessment of the intrinsic talent available in the students.

(*v*) After Ph.D. has been made mandatory for the teachers and senior professionals, by the universities, a large number of persons have taken up research work only to earn the degree. Perhaps, this sole factor is responsible for a drastically low quality output in the research.[13]

(*vi*) There is no single place in the country where almost all the library science journals, conference proceedings, etc. are available.

(*vii*) Supervisors to a large extent remain indifferent in the progress of the work. Still, they are quite enthusiastic in giving the end certificates without even verifying the outcome of the research works.

(*viii*) Research work in India is purely an individual effort. Funding from any organised sector is not easily available. At the most, resources of the institution where the scholar is working, can be utilised.[14]

The above discussion can be summarised by stating that the following areas are lacking in the research process of the Indian universities:

(*i*) There are no clear-cut guidelines for presentation of the theses.

(*ii*) The faculty responsible for supervising the research work is neither competent nor careful in doing their job. They lack proper research experience.[15] The factors responsible for these are listed as under:

- (*a*) Library and Information Science is considered as a service discipline and not an academic subject.
- (*b*) It has no theory of its own and whatever theoretical foundation it possesses today has emerged only after the practices were established.
- (*c*) Continuing of the disinterested persons at the senior ladder of the profession. This is more true of the old timers.
- (*d*) Not many senior positions are available in the field, with the result that it has failed to attract and subsequently retain properly motivated personnel.

(*iii*) Research students registering for the Ph.D. are least interested in taking up modern subjects involving information technology, database problems, theory based problems, etc. Perhaps, they believe that the process of their Ph.D. would be delayed or even may not reach its conclusion if they take up some such subject.

(*iv*) The examiners are mostly willing to oblige even in respect of a very sub-standard work.[16] Yet, they offer infinite resistance in a few cases. This is irrespective of the quality of work.

(*v*) In the universities, rigorousness of the doctoral process is affected with the prevailing localised politics. Thus, either the process becomes highly simplified or else is made very complicated in respect of a few persons.

3. TOTAL QUALITY MANAGEMENT

Total Quality Management (TQM) appears to be quite effective in overcoming the problems ailing the universities. TQM is an approach aimed at satisfying customer requirement on a continual basis (Quality - first time, every time, all the time) by involving every one (Total) in the system, and at a lower cost (Management).[17] Application of the tenets of TQM to research work and Ph.D. degrees can bring about a qualitative change.

In TQM, each participant (i.e. the research student, the supervisor and the examiners) has to perform his job meticulously and diligently so as to accomplish the desired level of the works on which doctorates would be awarded. In this context, it is further stated that if the number of doctorates awarded would be far fewer than the present level, the quality would be ensured. The under-mentioned suggestions could be helpful in implementing the TQM:

(*i*) Subjects of research have to be selected by evaluating their usefulness by taking into consideration the practical problems being faced by the libraries. In this exercise, the research student and his supervisor have be extremely cautious.

(*ii*) Ph.D. work should critically examine all the published literature on the subject. Literature search has to be exhaustive or near exhaustive.

(*iii*) The conclusions reported in the work should be based on logic after analysing all the existing viewpoints, rather than in a vague form reported in a casual manner. For this, the scholar has to work very hard.

(*iv*) Every Ph.D. student must contribute at least two research papers related to his research, before he is allowed to submit his thesis.

(*v*) The examiners should be drawn through a draw of lot from different universities and not by the research boards recommending their kith and kin to make the process too simplified or highly complicated, as the case may be.

(*vi*) The examiners should return the thesis after examining, within a reasonable time period say in 4 months. If they do not do so, they should be debarred from the examiner ship from all the universities. If however, they do not have sufficient time to devote to the same, they can always refuse to accept the job.

(*vii*) Universities have to be strict in ensuring that the rigorous process should not become too simplified for some people to get the degree even on sub-standard works or highly complicated for some others. For this purpose, every university should create a forum where individual grievances are heard and examined objectively. If any of the faculty members is found guilty, suitable punishment must be awarded.

If the above process of TQM is employed rather rigorously, the quality of the doctoral works would be enhanced and profession at large, would certainly be benefitted. However, there are certain prerequisites which have to be made available before embarking upon a well laid down Ph.D. programme, listed as under:

(*i*) There must be a national funding agency to finance the research programmes in Library and Information Science. This can be on the pattern of the Indian Council of Historical Research. A doctoral student can be paid say Rs 3000 p.m. He should also be provided for such incidentals like the cost of books, photocopying, travelling, etc. Similarly, for employed students, suitable financial support can be worked out.

(*ii*) No university should start or continue the doctoral programme if it is not receiving even 100 journal titles in the subject.

(*iii*) There should be a national examination conducted on the pattern of UGC or CSIR and it is only after passing the examination that the universities allow registration for the Ph.D.

(*iv*) Every student should be thoroughly familiar with the research methodology. It would be better if he has a minimum two research publications to his credit.

(*v*) Only those teachers or librarians be permitted to supervise research who are holding the Ph.D. degree for at least three years. In addition, each one should continue to be involved in research after his Ph.D. This can be measured if he has contributed a minimum of three research articles in reputed and recognised journals after the Ph.D.

4. CONCLUSION

If the above suggestions are implemented, localised politics prevailing in the university setup, would become quite ineffective, and better

research environment would emerge. Augmentation of the research facilities together with several quality checks in the research process would always ensure a meaningful research output. In turn, this would give a positive contribution to the profession and country at large would be benefitted. In other words, TQM if brought to play its role, in full measures, would bring better dividends by assuring a better quality of research output.

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Critical Conditions for TQM Implementation in Libraries

SAVITA MITTAL

ABSTRACT

The concept of Total Quality Management (TQM) like several other areas of activity is gaining increased acceptance and usage in libraries in recent years. This seems to be in reaction to the increasing domestic and global competition. The question of quality has become an issue of strategic importance for libraries. This paper seeks to lay down the essential conditions for the successful implementation of TQM in libraries.

1. INTRODUCTION

Quality has become the main issue for all the organisations for their very survival in this competitive era. Those organisations which adopt quality as a way of life will in the long run pull ahead over the others. The increased acceptance and use of TQM is the result of the following factors:

(*i*) In reaction to increasing domestic and global competition.

(*ii*) The pervasive need to integrate the several organisational functions for improvement of output of the organisation as well as the quality of output within each function.

(*iii*) The acceptance of TQM in a variety of service industries.

The libraries and library professionals in India need to shoulder the responsibility of managing the information revolution in an increasingly competitive environment by improving the ways and means of doing business. The application of TQM in libraries and emerging

print and electronic media will definitely improve their quality effectiveness, competitiveness and sustainability.

2. ESSENTIALS OF TQM

Quality is basically about expectations of functional performance. A quality product or service, is one that fully meets expectations and requirements of those who purchase or use it. Quality services are free of errors and also include accuracy, timeliness, completeness, friendlines and courtesy by anticipating customer's needs, knowledge and reputation.

Thus quality has been and will continue to be an issue of strategic importance for Total Quality Management (TQM). Generally, TQM is defined as "Creating an organizational culture committed to the continuous improvement of skills, team work, processes, product and service quality and customer satisfaction." TQM begins with leadership and focuses the entire organisation on users needs. Quality improvement needs to improve service which ultimately increases goodwill for libraries.

In brief, TQM is continuous user centered and employee driven improvement. The four basic principles of TQM are:

(*i*) Do it right the first time
(*ii*) Be user centered
(*iii*) Make continuous improvement a way of life
(*iv*) Build teamwork and empowerment

(*i*) Do it right the first time

This principle contends that the errors, if any, should be caught and corrected at the source *i.e.* where work is performed. This considers quality as a very personal obligation. Comprehensive training in TQM tools and statistical process control is essential if employees are to accept personal responsibility of quality improvement.

(*ii*) Be user centered

This requires the anticipation of user's needs and orientation to satisfy them.

(*iii*) Make Continuous improvement a way of life

The Japanese word for continuous improvement is 'Kaizen'. Kaizen

practitioners view quality as an endless journey, not final destination. They are always experimenting, measuring, adjusting and improving. There are four general areas for continuous improvement:

(*a*) Improved and more consistent product and service quality
(*b*) Faster cycle time
(*c*) Greater flexibility *i.e.* faster response to changing user demand and new technology.
(*d*) Lower costs and lesser wastage (for example—eliminate needless steps, scrape rework and known value adding activities).

(*iv*) Buid Teamwork and Empowerment

TQM is employee driven and empowers employees at all levels in order to utilise their full creativity, motivation and commitment. Employee empowerment occurs when employees are adequately provided with all relevant information and the best possible tools, fully involved in key decisions and fairly rewarded for results.

3. CRITICAL ELEMENTS IN TQM IMPLEMENTATION

TQM refers to a strategy that fosters a broad spectrum of improvement of all dimensions of the library. But often libraries tend to overlook the following five elements of TQM which are critical to its success. A brief discussion of these elements is given below:

– Trust
– Teams
– Training
– Techniques
– Top management commitment

3.1 Trust

Trust is the foundation on which TQM is built. It is not something one can demand or order, infact it has to be earned. Instead of focusing on building trust, libraries spend large amount of money and time on surveillance or on inspection systems. It requires commitment from the top. Quality emanating from trust is sustained and is has become the essential part of the corporate survival and success.

3.2 Teams

Building teams is another effective way to improve the quality. It

helps solve the long pending unsolved problems. Also, it empowers people to act and have no status barrier and they are nothing but self-directed work groups aiming to improve the concerned unit quality by sharing the responsibility equally. Therefore, it helps in solving problems at process and net results will be faster and economic. Further, it builds trust, improves communication and develops interdependence. So, for continuous improvement in the library system, teams should carry the work forward to achieve quality. Everyday improvement in the library products and services will give satisfaction to the libraries and its users.

3.3 Training

The training builds quality. But often it is found to be ineffective and not delivering as is intended. Thus, to attain quality, the libraries have to involve everyone in the training process. The internal and external requirements, expectations of the users should be identified and librarians should provide the regular training to the staff. Time to time varieties of training programmes at different levels should be organised by the libraries. This will help in developing one's skills and abilities and also bring creativity and innovative potential among the library staff thus yielding better results and improvement in users services.

The libraries can organise the following training programmes:

3.3.1 Orientation of New Staff Members

The training should be provided even to the new staff members. They should be acquainted with the objectives, functions, general policies and services of the library, with special reference to the particular department, in which they shall have to work. They should understand the responsibilities of deferent categories of staff. They should be given necessary feedback regarding different operations carried out in the libraries. A staff manual can prove to be valuable tool for a new member.

3.3.2 Continuing Education and Staff Development Programmes

Library administration must accept the responsibility for providing support and opportunities for continuing education and staff development programmes. One can get the study leave with full pay to pursue formal courses in Library Science or to conduct research. The profes-

sional staff should participate in conferences/seminars/symposia/ workshops organised at local, regional, national and at the international levels.

3.3.3 Refresher Courses for the Professional Staff

Time to time refresher courses should be attended by the professional staff to keep themsleves up to date in their fields of interest. Summer training programmes, weekly programmes and other like programmes are also organised by different libraries, organisations, institutions and information centres for the librarians to provide the latest information and training for the professionals.

Thus training adds the quality in library products and services.

3.4 Techniques

TQM requires process to be improved continuously by reducing its variability. Whatever technique is used it should be backed by the management commitment. Quality tools must become a part of the libraries and act as focal point of never ending improvement. 'Measurement, however continues to be major impediment in improving the quality of our libraries'. Cost and value based information services require, the quantitative analysis from the library management. Statistical process control as a tool assures that whatever process is being operated, it must be reliable and constant. Processed data may be presented by using diagrams, graphs, charts etc. Some of the techniques to measure TQM are:

3.4.1 Flow Chart

A flow chart is a graphic representation of a sequence of activities and decisions. The process of flow chart is a valuable tool for increasing efficiency, reducing costs and eliminating waste by the TQM teams.

In libraries, day to day and time to time activities of the staff should be mentioned on the flow chart to achieve quality. Taylor has also pointed out in scientific method that a job of a person can be analysed by calculating the actual time spent on a particular job and thus eliminating the wasteful movements.

3.4.2 Histograms

The information presented in histograms is represented by a series of rectangles or bars which are proportional to group of data.

Histograms also illustrate the various measures of central tendency *i.e.* mean, median and mode. Library professionals can also present information of library services and its material with the help of histograms. In the following areas, the histograms could be used in the libraries:

- Year-wise average number of users
- Year-wise average number of books/periodicals added
- Year-wise average number of loss of books/periodicals
- Number of library services added or discontinued in a year
- Average number of queries received in the library
- Average number of queries answered by the staff
- Average number of books processed in a day
- Average number of books issued/returned in a day

3.4.3 Run Charts

It is also known as time series or trend chart. A run chart tracks the frequency or amount of given variable over time. It is a line graph which illustrates how a process changes over a period of time. It is an effective tool for presenting data. To achieve quality in library services run charts can be applied usefully in the following areas:

- Annual budget allocations
- Subject-wise budget allocations
- Loss of books/periodicals
- Arrival of books/periodicals

3.4.4 Control Chart

Control charts are line graphs used to track a process trend or performance. They tell us about the performance of the work. To measure the performance of the work, control charts can be applied in the libraries in the following areas:

- Time spent on acquisition of books/periodicals
- Time spent on processing of books/periodicals
- Time spent to reach the books/periodicals on shelves.
- Time spent on stock verification and stock rectification etc.

Performance of these types of job can be measured with the help of control chart. Thus with the help of tools and techniques used to improve TQM, libraries can also improve their quality successfully.

3.5 Top Management Commitment

The commitment of the top management in all aspects of TQM is must for its success. Specially in the internal audit of the library top management can detect hidden sources of trouble as well as unnoticed strength. The philosophy should be to solve problem, discover and build on strength, standardise and institutionalise improvements.

4. CONCLUSION

Thus, in the age of world-wide competition and flow of information providing services according to users needs and requirements, quality management has become a matter of strategtic importance for the libraries. TQM which focuses on continuous improvement of library products and its services is a handy tool to achieve these goals. For the successful implementations of TQM in libraries—creating trust among employees, building teams, training, using techniques such as flow chart, histograms, run charts and control charts and commitment from the top management are essential.

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A Fresh Look Towards Library Services: Need for Transformation

ANURADHA GUPTA

ABSTRACT

The paper advocates a transformist approach to library use and services provided in view of the info-technological developments and highlights the need for activities like user education, interaction within academic libraries and society, improvement in readers services through fast supply of documents and extensive S.D.I services in academic libraries. It analyses traditional libraries *versus* digital libraries, in view of the requirements *vis-a-vis* resources in prevailing situation in Indian libraries. It enumerates the pros and cons of both the systems and advocates for a mix of both techniques as per the individual need and resources.

1. INTRODUCTION

A library is the heart and soul of knowledge production. A transformist approach to library use and services provided is required in view of the info-technological developments. Information technology is removing time and space lag in disseminating information and compressing the whole scenario. This transition phase is compelling for change in society. Fibre optical transmission technology enables dissemination of information at a tremendous speed, which is multiplying at a greater speed everyday and giving way to knowledge that doubles every five years. Libraries having traditional mode of functioning can not afford to remain the same, as pre-IT libraries are quite different from modern libraries. As the situation demands, with the gestalt change, libraries can be centres of knowledge production and dissemination to their users in true sense. Libraries have a definite

role to play in knowledge production. It hardly matters whether it is functioning in traditional way or in IT environment. It may have changed in its characteristics, scope and ways of working, but basic function will remain the same *i.e.* dissemination of information.

2. NEED FOR TRANSFORMATION

Libraries in India are in a strange paradoxical situation. On the one hand there is lack of resources particularly finance and qualified man-power and on the other hand, existing resources are not being utilised properly. There should be some mechanism to make libraries more useful. Some of the ways through which improvement can be made in order to increase the potential use of libraries, are being described below:

2.1 User Education

Large amount of literature is lying in libraries. Every year considerable amount of money is spent to enrich its collection. However, the utility of resources lies in their use. The only way to improve use and access to information is to develop services in such a way that these resources are exploited to full extent. User education purports to expose the library-resources and services to its users. It removes the curtain in between the user and the library by training them how to search and retrieve the required information from library. It brings user and information together through information-officers.

Library may function either in traditional or digital environment, user need to be educated to make use of library catalogue or OPAC, reference sources, and bibliographical sources. Use of information depends upon awareness about availability of information. By educating the users libraries can increase the utility of their resources or holdings.

2.2 Developmental/School/College Libraries for all segments of of Society

Sufficient numbers of school and college libraries are spread in almost all residential areas. While public libraries are not able to cater to the library needs of the common people, academic libraires should interact with the community in which these are located. Media persons, correspondence students or housewife, all need some kind of

library support in their life. Moreover, there is scarcity of proper space for study in urban areas, with the flat system of living. Academic library resources can be better utilised, if these are made available to the community. It may become a source of additional revenue also. For this academic library has to work as an autonomous organisation in the premises of its academic institution.

2.3 Fast Supply of Documents/Information

Society is changing very fast. Everywhere there is shortage of time. Global expectation of research time has reduced considerably. Long-term research period is one year while short term projects are expected to take three months time. Hence, libraries have to come out with some solutions. Requirement of the day is, to give information instead of source of information. Users, researchers should be supplied information within the shortest time on their table. Hence, libraries should improve their functioning in order to reduce the access time in getting the material. Here information technology can help to a great extent.

2.4 Selective Dissemination of Information/ Document Delivery

Selective dissemination of information (SDI) by maintaining user profiles will help in rendering information at a faster speed. Introduction of IT in libraries will reduce the efforts required to retrieve the information. Practice of maintaining user profiles with the content of information available in the library will help in rendering SDI service. In the changed environment, which is surcharged with urgency and speed, providing location of required document will perhaps not solve the problem. Now, libraries have to provide information/literature on the table of researchers. Scholars should also be provided with abstracts, extracts, bibliographies on the desk. Keeping the user profiles is highly essential in this direction. This will bridge the gap between information providers and information users. Still specific interest requirements in view of the project or topic undertaken at a specific point of time, need to be taken care of. Curriculm development activity is although one of the most important and common activity in academic institutions, however, rarely any assistance is taken from the library. The suggested reading list/recommend books in the syllabus often contain such references, which are quite old and not

available in the market. The recommended documents should include the latest reading material available in the market. This situation creates further problem as students and teachers have to wander here and there in search of the material. Nature of study material remains the same continuously for several years. Neither students nor teachers need to refer what new literature is available on the topic in the market. Old notes and guides are relied upon a lot in this situation and lead to dependence on photocopied material to a great extent. This distracts the academic community from interaction with the new literature. Libraries by providing reading list on the relevant topics can really bring change in the situation.

3. DIGITAL LIBRARIES *VERSUS* TRADITIONAL LIBRARIES

Digital libraries have made it possible to have access on vast amount of literature hosted on a PC anywhere. A large volume of information is available on Internet. Facilities like e-mail, virtual libraries, virtual racks, virtual text reading have opened a new vistas of opportunities and altogether new promises in the field of library services but these developments have their own limitations. Surfing Internet and downloading or locating required information is not a very easy job. It requires some skill to operate the machinery on the part of the user. In addition to this, it involves lot of expenditure on infrastructure and additional resources, such as trained manpower, which libraires generally do not have. Then, technology of hardware and software is changing at a great speed. They also impose their own problems, time and again.

In addition to these practical difficulties, other drawbacks of digital information are:

(*i*) Online information is becoming commercial
(*ii*) One has to pay every time for the databases
(*iii*) Passwords are required to operate
(*iv*) Online information life span is very short
(*v*) It has less authenticity

Continuous change in surrounding system further poses difficulty. Flow of information on Internet is more information based and less knowledge based. All these factors suggest that libraries in their physical form must exist. In traditional libraries a book published 200 yeas

ago, can be referred easily without any physical or structural assistance. Storage of books for posterity, either in a library or at home does not require any infrastructure and efforts, while storage of digital information is a real challenge. All these suggest that adoption of technology has to be undertaken as per the need and resources available in given situation. However there is urgent need to adopt technology to support the routine operations. In a country like India, which is still living in villages more than in advanced cities, have still bullock carts running on its roads, having illiterate, literate and semiliterate population coupled with lack of resources, both digital and traditional libraries will exist for at least one decade.

4. LIBRARY PERSONNEL

In the changed situation, charged with sociological and technological advances, library professionals should be highly esteemed persons in the society; they should be scholarly persons having aptitude of research and development, knowledge of latest technology, computer operation and awareness of latest development in all fields of subjects as well as the surroundings. It is essential to give proper status to librarians in order to encourage competent persons towards this field. There should be "Indian Library and Information Services" cadre to bring qualitative change in library operation, like other central services such as IAS and IFS. It is high time to have a policy on the status, job requirements, duties, and code of conduct etc. with incentive linked promotional avenues for the librarians. It is desirable to give recognition for work of excellence in this field also. This will give boost to others and will work as a motivating factor. Library staff is an essential link between the users and the resources. Qualified and dedicated staff having orientation towards providing library services may only be helpful to exploit the resources for its users. This is possible when proper attention is paid to renumeration and working conditions of librarians. Usually libraries are having one or two professional staff whereas, rest of the staff consists of non-professional or semi-professional personnel. However, all are called librarians by general users. Only professional staff can justify the rendering of proper library services. Hence, libraries should have all professional and qualified staff in order to bring qualitative change in library services.

5. CONCLUSION

In view of the sociological and technological changes in the society libraries need to be reorganised. Basic change in the resources and infrastructure is needed by introducing information technology and qualitative change in the library staff structure in order to obtain sustainability of libraries in the modern society.

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Role of Cultural Forces in Human Motivation

MILAN NATEKAR

ABSTRACT

The present paper discusses the 'Role of Cultural Forces in Human Motivation'. The role issues highlighted are how to make human-force to contribute its best to get best performance in whatever terms we try to measure it. Managers are moaning about under-productive people because, they have successfully missed the four key dimensions of 'people at work'. That is why, they have failed to identify 'where', 'who', 'how' and 'why' of environment, culture, development and rewards.

1. INTRODUCTION

Human being as a rational and social animal has been attempting to get best of human capital and other inputs; other inputs being material and physical has been able to control them to his advantage. The real issue before him is how to make human-force to contribute its best to get best performance in whatever terms he tries to measure it. Human resource development scientists—particularly psychologists are concerned with the study of human mind as his performance is related closely with his 'willingness to work' and 'ability to work' on one hand, and the environment in which he works on the other hand. In that sense, human-made environment which we call as culture has to do with his motivation. Here an attempt is made to touch motivation and how motivation can be improved by identifying and encashing on cultural forces.

2. WHAT IS MOTIVATION?

Motivation is a productivity factor in business whether it is industry or commerce. Productivity is the finest combination of two elements namely, 'economy' and 'efficiency'. In one sense motivation stands for all human urges, desires, strivings or needs that direct and control or explain the human behaviour. In another sense, it is the process of stimulating the people to action to attain desired goals. It is an act of stimulating and inspiring someone or oneself to get the desired course of action. It is pressing the right button to get desired result. Motivation is one way of getting the work done by subordinates where it increases output, improves quality and cuts down the cost including reduction of wastes of all kinds. Motivation is something that expands the willingness to work on one hand, and ability to work on the other. The motivation studies have clearly demonstrated that man within his environment or culture where he works, attains 75 per cent without much motivation and if he is motivated, he can easily attain 100 per cent performance and possibly cross even 100 per cent performance level. That is why Peter Drucker remarked very aptly 'All organisations say that people are our greatest asset. Yet few practice what they preach, let alone truly believe it'.

3. WHY MOTIVATION?

Business is not a charity nor a religion. It is a game. The business of valuing, motivating and rewarding people is an artistic exercise. It is based on individual performance but if that performance is scored against profit expectations and management goals and ambitions, performance is subjugated to the business agenda and both individual potential and corporate profits suffer. The major task of management today is to motivate and measure the people to drop their contribution straight to the bottom-line. Manager's greater challenge is to leverage the relationship between the 'people' and the 'profits'. Managers are failing in that task if individual performance is not improving bottom line performance. The basic reasons as to why people are to be motivated is self-explanatory. These reasons for motivating are:

(*i*) It guarantees high level of efficiency.
(*ii*) It kills resistance and encourages change for the better.
(*iii*) It builds sound human relations.

(*iv*) It kills the problems of labour turnover and labour absenteeism.
(*v*) It builds sound corporate image.
(*vi*) If gives full scope for improving employee knowledge and skills.

4. WHY COMPANIES FAIL TO MOTIVATE?

Managers are moaning about under-productive people because they have successfully missed the sinewal connection among the four key dimensions of 'people at work'. That is, they have failed to identify as to 'where', 'who', 'how' and 'why' of environments, culture, development and rewards. A successful manager is one who knows how best he can integrate these four dimensions to his advantage which is company's advantage, too. That is why, all four must be connected judiciously to produce the performance and results that bring profits. Let us touch these in brief.

4.1 The Environment

In the context of business, environment is the 'where', including the infrastructure, the frame-work, the social architecture that attracts people, the organic core that supports and the work place. If everyone who worked won the lottery, how many people would keep going to work? One can say, hardly 5 per cent and those would likely be none other than educators, creative types and community workers, whose true pay comes in immaterial or psychic gratification. It is a naked truth that most people do not enjoy what they do or what work they do. They are being dragged to work, with predictable negative effects on production and profit, including high turnover with its high costs, disrupted relations and lost knowledge.

4.2 Culture

Culture is the 'who' of the work place. One can define culture as how people interact or work? How they support mission? How they regard each other? How they work together towards goals? And how they treat the customers—the real asset of the organisation which hardly can be physically shown on company's balancesheet—the mirror that reflects its image. One knows that about 75 per cent of the mergers and acquisitions fail to deliver the financial goods to the bottom line. About

the same percentage of 'changed' management efforts fail to deliver. The reason is that two different cultures, forced together, often react with volatility and speak upon the validity of 'distinctiveness' of cultures.

In this age of merger mania, all of us see a pattern of growth and expansion, then merger and acquisition, then divestiture or shrinkage for economies of scale to deliver on the projected profitability, then carefully crafted statements from the public relations department as to why profits are much below projections. The crux of the issue is — why there is such an utter failure to deliver? It is because, we have failed to factor in culture up right to the front. The consequence of not dealing with cultural issues of respect, trust and loyalty is that it does not take long long for people to adopt a 'me first' mentality. Why go out of your way to 'serve a customer'? Why be 'innovative'? Why be 'loyal'? The closely related questions why people leave organisations? It is because, they are not appreciated; they are bossed; they want more money; they want better benefits; they want greater and lucrative opportunities. About 50 per cent of their time they spend in leave because they do not get along with their boss or co-workers. Disillusonment with the vision, direction or policy and hence, strategy of the company also plays a pretty big role. Experts have come to the conclusion that Compensation is the Fourth on the Top Ten Reason to leave the organisation. It is heartening to note here that strong leadership may hold things together for a while, but talented people will move on before they are caught in the gap between promise and performance—a dream and reality.

4.3 Development

Accordingly, development is the 'how' of the work place. According to one estimate, companies all over the world spend around 600 million US dollars on training and development, of which 80 per cent is wasted because most of the organisations provide 'entertainment' and not 'education'. A course running for a day or a week just do not work. Education, without repetition is pure entertainment. Development in core competencies sticks a little longer because people have a fair chance to use the knowledge. Development, in essence, is a hope, a belief in potential. It is a way to create the future. It requires figuring out what makes people work? It is their motivational profile—how to make them assets to be invested in, not resources to be

depleted. By providing information, learning and training alongside measurement against the present goals, one can assess the return on your investment in people—and drop into the bottom line. Effective training is specially designed to meet specific business goals.

4.4 Rewards

Rewards is the 'why' people work? The new generation of employees are not happy with age old traditional motivational models of compensation plan, performance reviews and merit increases. That is, a 'carrot and stick' is not going to work because, the profiles of motivation of people are more individualised. The 30 plus generation is working 60 hours a week, juggling careers, marriage, mortgage, middle age and the looming large spector of retirement with no savings. Whereas 20 plus generation is looking for something to do, and some motivates to do with it. They are technologically empowered and creative. They know that the best way to see the future is to invent it. An effective rewards system laps into individual motivation. The number one Reward is Time Off and second is psychic gratification from work.

In short, to create the optional work place one has to improve all four dimensions namely, environment, culture, development and rewards. People do not hesitate to do work that is authentic and meaningful. Authentic in that they are clear on strategies, the missions, vision and values; and meaningful to them intellectually, creatively, whatever motivates them to do their best work. People certainly want to work where they are self-empowered, where thy are developed as assets, an environment where they want to come to work and where they are rewarded through their own motivational profile that differs from person to person.

5. WORK CULTURE AND ITS IMPACT ON EMPLOYEE MOTIVATION

Already, a reference has been made to 'culture' as one of the dimensions of motivation. Let us go into the ins and outs of this factor and what impact it has on employee motivation:

5.1 What is 'Culture' and 'Work-culture?

The concept of 'culture' or 'work culture' and ideas about gaining

control over corporate 'culture' so as to improve organisational performance have come in prominance and focus in the management literature in recent years, offering the promise of directing and inspiring employees' behaviour and attitudes through the management of meaning and symbols rather than through the unwidely leavers of organisational structure. After all, culture appears to refer to the more intangible aspects of an organisation like beliefs, values, norms, attitudes, outlooks which contrast with the observable hard facts of structure. Changing organisational structure as a part of Human Resource Strategy looks more feasible and straightforward than trying to take hold of something as impalatable as culture. It is widely advocated by management consultants who claim to have discovered the secrets of success of 'excellence in corporate performance'. Though cultural analysis is still a fairly recent phenomenon in management literature and is often carried at rather superficial level, there is a rich tradition of social scientific analysis to build on. We cannot forget luminaries like Max Weber, G.H. Mead, V.Lynn Meck, Paul Bate, Edgar 'Schein' and others who contributed their mite on organisation culture and its impact on motivation.

'Culture' is a society's personality. Culture is the study of character of total society encompasing things or variables like language, knowledge, law, religions, food habits and customs, music, art, technology, work patterns, products and other artifacts that give a society its distinctive flavour. It is the sum total of learned beliefs, values and customs and taboos that come to direct human behavour of members of a particular society. Culture is one that is invisible, one that satisfies needs, one which is learnt, one which is shared, which is invented and dynamic.

'Organisational culture' for a laymen means the philosophy, spirit, character, religion, the way company does the things, or its style of working. However, as the seekers of knowledge one should turn to experts. Edger Scheing—a social psychologist, defines 'corporate culture' as 'the pattern of basic assumptions that the given group has invented, discovered or developed in learning to cope with its problems of external adaptations and internal integration'. Mc Neill says 'corporate culture consists of patterns of organisational behaviour that are learnt, transmitted and symbolically derived.' These patterns for behaviour constitute a group characteristic way of perceiving its organisational environment—a group shared orientation

to organisational stimuli. Organisational culture is neither an organisational attribute nor an individual attribute; rather, it is a system of shared orientations to organisational attributes a concensus of perceptions regarding organisational stimuli.

Roger Harrison described four types of organisation culture that prevail in different situations. These are: 'Role Culture', 'Power Culture', 'Achievement Culture' and 'Supportive Culture'.

A Role Culture is one that emphasises order stability and control and is based on a quest for security. Typical of a role culture might be an old fashioned public sector bureaucracy. A Power Culture is one that emphasses strength, decisiveness and determination and is based on a quest for security. Power cultures are found in some large, private sector organisations where a handful of senior executives wield a large amount of power in an autocratic manner, and in a privately owned smaller organisation where the controlling family may wield considerable power. Achievement Culture emphasises success, growth and distinction and is based on self-expression. This is found in modern progressive organisations that encourage autonomy and self-expression. Support Culture is based on the idea of mutual service, integration and values and is based on a sense of community.

There is a close link between the organisation structure and culture—the value system needing a perfect match between structure and culture. That is, if an organisation makes major changes to its structure, it will warrant to promote new and more congruent culture and vice a versa. Changing the culture of an organisation is difficult and requires time, resources, patience and relevant skills and able leadership. Culture change requires a strategy that takes in the entire organisation. Change at a more modest level has been the focus of organisation design—popularly called OD—specialists for the past 40 years. Professor Kurt Lewin argues that it is not feasible to expect people to change while they are still 'cold'—that is, they are in their natural conservative state, suspicious of change and 'frozen' into a set of mutually self-supporting attitudes and habits. Therefore, an 'infreezing' process has to be placed before individuals that become receptive to new ideas and new methods of work. The process of 'infreezing' can be tackled at four different leves and it may be necessary to commence initiation at all four levels simultaneously in order to achieve the best input: (*i*) Reducing psychological defences by counselling, group discussions and providing information. (*ii*) Accen-

tuating benefits by communicating the advantages to be gained by change. (*iii*) Challenging the current status-quo and the attitudes that go with it and (*iv*) Removing barriers to change including training staff in the new needed and skills.

Thus, organisational culture derives from dynamic model of learning group dynamics. That is culture (*i*) is always in the process of formative and change (*ii*) tends to cover all aspects of human functioning (*iii*) is learnt around major issues of external adaptations and internal integration and is untimely embodied as interrelated, patterned set of human relationships.

Coming to the impact on human motivation, the following points can be worth noting.

(*i*) Mind set Change

The long lasting frigid mind set of each person is changed. This itself makes him to love his job, take interest, initative and he becomes one with job. The result is that, he becomes more loyal and committed to give his best of what he has.

(*ii*) Ready to Learn New Skills and Knowledge

Today we are aware of the concept of 'knowledge workers'. Each employee is essentially a knowledge worker because, he fails, if he is not: therefore one changes and adapts new skills and knowledge. This adds to his efficiency and economy in working and productivity.

(*iii*) Change in Attitude

Organisation culture brings much desired change in attitude. Attitude towards job, himself, co-workers, the management, company and so on. That makes him to strive hard for improvement of company image as he develops sense of belonging.

(*iv*) Reduced Wastage of all Kinds

It is human tendency to cause damage to the things that belong to others; in a factory or office, we see people waste material, there valuable time, equipments, position of building. This results in unwanted accidents, damaged output, more scrap resulting in high cost and low quality. All this is washed away—as he is not knowing that it is his job, his company, his co-worker and that all these are part and parcel of society or community.

(v) Men and Boss Relations

Every person understands what is he? What he is expected to do?... What relations he has with this boss and peers? Conflicts and bickerings are smoothened as efforts and rewards are well balanced. As motivation is both group and individual issue, individual differences are identified because horses can not be donkeys and donkeys cannot be horses. A person who has proved his mettle is to rewarded. The reward system is based on performance and merit, where able and efficient are rewarded highly and disabled and inefficient are punished by the same token.

That is why, one can conclude with the statement that, good management can turn bad organisation in a shinning success and bad management can spoil even the soundest organisation. This speaks of organisation culture and its close relationship between employee motivation and morale. There is direct relationship between change in organisational culture and employee motivation and performance.

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Integrated Approach for Quality Assurance in Information Services

I. CHANDRAIAH

ABSTRACT

The total quality should be defined through multiple approaches in libraries and information systems. The paper describe that the approaches such as product-based approach, the user-based approach, the process-based approach, the value-based approach, the standards-based approach, orientation approach, and evaluation-based approach are quite effective in ensuring quality assurances in library and information services.

1. INTRODUCTION

Libraries and information centres traditionally acted as the custodians of information resources laying relatively much less effort to understand the requirements of their users. This static orientation of being merely custodians of knowledge has been the biggest stumbling block coming in the way of enhancing the utilisation of resources and in giving qualitative services. The training of staff also did not lead to quality orientation and concept. The changing information needs of the society forced the library professionals to switch to modern qualitative methods in their services. The advent of information technology has prompted user to expect qualitative services. While alternative information services are available, libraries and information centres have to compete for attracting users towards their services like other service organisations. If libraries have to retain users or attract new users, they should develop certain standards in their services. Otherwise survival will be at stake. At the same time

service should be provided at a competitive basis. The quality concern should be in-built into the system. Library and information systems, in order to implement quality systems standards, should develop on-going methods for assessment and measurement of quality of service. The total quality should be defined through multiple approaches in libraries and information systems.

2. PRODUCT-BASED APPROACH

Information is a basic requirement for any production. Books and periodicals and other information material are resources for production in the library. The packaging and repackaging of information, abstracting, indexing, bibliography are the products of the resources. Quality assurance in the library product depends on library's financial position, market for the product, level of user, scope of the product, organisational support etc. Quality resources leads to production of quality products and services. Purchasing of certain products on consideration of their low cost may result in poor quality of service. For example, some libraries subscribe for current contents of science on floppy disks. Due to non-availability of computers with enough hard disk space to copy number of floppies for cumulative search, utilisation of these products/resources and quality of their service are low. If subscribed for same in CD-ROM though it cost little more, the situation might have been different. Quality and cost are two sides of a coin. A service or product without quality may have negative impact on the organisation itself.

3. USER-BASED APPROACH

The user determines the quality of the goods "The product or service that best satisfies the user is the higher quality product"[1]. The clear understanding of user needs and their approaches to information helps to produce quality products or services. The user oriented approach for quality equates user satisfaction with quality. User satisfaction reflects the attitude of the user. An information system adopting the user view of quality needs to identify accurately the target users, transport their needs, and then design, construct and deliver the appropriate product and service. For success in ensuring quality all of the factors contributing to the value of the product have to be

involved. However, user satisfaction may not be achieved sometimes for reasons that have nothing to do with quality of the product. For example, the user may not understand or appreciate the benefits of a new product or service right away but may do so if given time. Until the customer says the product or service is good it will not be considered of good quality.

The approach of the user satisfaction alone can not develop total quality. Because the user based approach relies solely on the users' opinion, but methods for obtaining the opinion are unreliable and at times unable to effect changes in preference and level of satisfaction. Analysis of computerised referral query database of a specific organisation may provide clue or solution for changes in user preferences. Repeated queries may reflect the user needs and their approach to information. User databases strengthen the query analysis by matching certain elements like users qualification, specialisation, age, status sex etc., with subject area of quarries, nature of the quarry, level of information sought etc. Through this approach quality assurance may be inducted in library and information centres.

4. THE PROCESS-BASED APPROACH

The quality of process proves the quality of the product. Since all work in the information system is process based, quality can be measured and implemented through process control methods. Process based approach in other words will be "conformance to requirement"[2] The product or the service should be processed in accordance with the user aspirations. Final product/service alone cannot improve the quality all of a sudden. The number of reference questions answered is considered as a direct measure to evaluate the quality in context of library services. But the number of reference questions handled reveals the quantity but not the quality of the service. "If a continuous programme is built into the systems to study the process by which reference service is delivered, then one can confidently say that the performance of the reference desk has improved"[3]. Development and implementation of product or service through interaction with users in all stages indicate that the librarian is responsive. This proves not only the quality of product/service but also quality of its process to deliver. Hence, most of the library professionals develop the product/service in the absence of user preference. Its implicit assumption is that customer

satisfaction is directly related to the precision of meeting the target specification of a product or service.

5. VALUE-BASED APPROACH

Information is a strange product. Its value fluctuates widely and often rapidly according to circumstance and the needs of the user. "Most of the information provided by our information services is not so crucial. We are inclined to protest".[4] If we are in a position to provide the right information in readily usable form to the person who needs it, at the right time it may be valuable indeed to the user. The quality of information determines its value. The purchase decision involves weighing of the quality against the price, because many of the attributes of quality are subjective assessments. If a product or service was rated better than the competition on one or more of its dimensions, it would be considered of a higher quality. The possible dimensions of the quality product may be:

- Performance of the product
- Additional features
- Reliability
- Meeting the standards
- Durability
- Service ability/reservice ability
- Appropriate response from the user
- Perceived quality

Some of the above dimension may rank more and others less in determining the quality of the product from the users point of view. The information products like compilation of bibliographies, indexing, abstracting package and repackaged information services etc., are involved in value-based quality assurance relating to users. Financial constraints, inadequate infrastructural facilities like men, machinery, material and management, suitable market are some of the barriers for attaining the quality assurance in the information systems. Computer based production and service may be the possible solution to the problem.

6. STANDARDS-BASED APPROACH

Logically, total quality management should be the set of practices that enables an organisation to deliver quality products or services. The national and international organisations for standardisation have defined a set of standards. If an information system conforms to these standards, it is considered to have the basis for ensuring quality output. "A standard is designed on the basis of the accumulated results of advances in the field and experiences of people working in it".[5] A committee consisting of standards boards of 91 European countries adopted the ISO 9000 series of standards of international level for quality in product and services in order to facilitate the flow of goods between the 12 member countries. The clauses in the standards are prescribed conditions and common set of quality system standards.

The present libraries are providing sophisticated services such as on-line access to information through databases, Hypertex information, on line-public access cataloging etc., such services, have succeeded in internationalising them. It is now possible for an information user to use information from any part of the world through network systems. Seeking of information at the international level calls for standardisation of library systems and services. Standards are developed for library services since very long in the areas like bibliographic entries, cataloguing, classification etc. Adoption of suitable model of standards improve the quality of library and information services. Quality systems model ISO 9002 may be more suitable for application to libraries and information systems. The other models for bibliographic control and standardisation are development of MARC series, USMARC, UKMARC, UNIMARC, CCF, ISBD, ISSN, etc. adoption of any of the above standards shall result in quality.

7. ORIENTATION-BASED APPROACH

Orientation to the library professionals periodically can sharpen their professional activity and keep them abreast with the latest developments in the principles and processes of information services. This approach improves the quality of products and services in the organisation. Orientation approach creates the avenues to share the knowledge of experts in the subject area and inspire the professionals towards qualitative services. There need not be any hesitation to say

that a vigorous programme for training people in new skills is the secret of production of quality products and services. The orientation programmes create consistency of purpose towards improvement of product and service. It is a choice to learn new philosophy. This approach provides knowledge on modern tools and creates awareness about latest trends and techniques.

8. EVALUATION-BASED APPROACH

Standards are for quality design. Certain products and services branded and popularised as qualitative from different information sources may be evaluated for their varacity. At the same time the product and services of our organisation also can be evaluated for their conformance to certain standards. This approach provides the opportunity to compare two parallel sets of products and services for claims of quality. The elements considered for the purpose of evaluation through this process are: suitability to use; suitable cost; suitable to user needs.

8.1 Suitable to Use

In other words it is proper the understanding of the users' needs. It contains certain dimensions: Quality of design; Quality of conformance; Availability; Reliability; Readily useable.

Quality of design: It is a measure of professional approach of the library professionals.

Quality of conformance: The products or services should be in conformity with the laid down procedures and standards.

Availability: User can avail the product/services whenever needed. The facility should be free from all technical problems.

Reliability: It proves the quality and standards of the product/service. Product should meet the user needs and obtain their satisfaction. The product which creates repeat demand will be categorised as reliable.

Readily Useable: The product/service should be available in a packaged format. There should not be any cumbersome process or procedures in using the product/service whenever needed.

8.2 Reasonable Cost

This approach is aimed at obtaining high quality at low cost. In order to achieve this dimension, the product and process would have to be

designed so as to appear cost-effective to the users. The process would be structured in such a way that it would allow the product to be made within affordable parameters. The cost of the product should be able to get users' support and approval through quality. The user always wants that the content value should be equal or superior to the cost. Continuous support for the cost from the user cannot be attained until the product/service does not lower its quality and standards.

8.3 Suitable to User Needs

This approach is aimed at determining the user's needs before the user becomes aware of them. Some of the user needs are categorised as 'must be'. These are the characteristics the user expects to find, for example, a user entering a library expects the seats and tables to be clean and the room temperature to be within a comfortable range. When these conditions don't exist, the user will be very dissatisfied, but if they do exist, the availability of these facilities is taken for granted. The one-dimensional characteristics are directly related to customer satisfaction. An example may be the lighting in the library or the structure of the seats and height of the table suitable for writing and reading etc. As the brightness of the lights increase, satisfaction level also increases. If these are not be present, the user may not aware that they are missing. Their absence may not lower the level of user satisfaction.

The definition of quality was elusive, but the two approaches that gained widespread acceptance are:

- Product - based, emphasising conformance to standards.
- User-based, stating the user is the ultimate judge of quality.

In order to implement both approaches, a library or information centre needs to decipher the user's needs and convert these to the standards. Then as user needs change, the library would respond with required changes to standards. The key to being responsive is to have a user focus and a set of tools and management practices that enable continued improvement of the product.

9. CONCLUSION

Implementation of quality based approach, necessitates total participation of all employees in the library or information centre. By

educating them through periodic orientation programmes in problem solving tools, they can be empowered to respond to customer and process the problems. The foundation on which a successful total quality management effort rests includes: User focus; Total participation; and Periodical improvement.

Total quality assurance is a complex task, it can not be defined with a specific approach. A combination of multiple approaches are needed for comprehensive achievement. Total quality is a total system approach and an integral part of high level strategy. It works horizontally and vertically across functions and departments involving all employees. The combination of employees, management, principles, processes and quality conscious users will bring the quality assurance in the library and information systems. We can conclude that the relevance of total quality management is to achieve the ultimate objective *i.e.,* user satisfaction. Right information to the right user at the right time is the quality slogan for the quality conscious libraries and information centres.

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Managing Change: Skills for Quality Improvement

RAKESH SINGH BISEN

ABSTRACT

The paper provides an overview of required for managing change for skills quality and improvement. It discusses steps for the execution of plans for change.

1. INTRODUCTION

Organisations resist change—they have 'immune system' that automatically resists alterations to the status quo and so anyone who sets out to create change needs to know exactly what one is faced with. Most people who take on this type of challenge are already capable and multi-skilled individuals, yet even the most capable people are often surprised and unprepared for some of the difficulties they encounter.

A person needs to acquire certain skills. The essential skills often over looked are as under:

(*i*) Recognising situations where success is possible
(*ii*) Engaging people and helping them through the process
(*iii*) Planning and project management of the change process

2. SKILLS REQUIRED TO EFFECT CHANGE

Skill 1: Recognising Situations Where Success is Possible

A major change is undertaken when faced with crisis. Organisations that desperately need to change are likely to do nothing of

significance, until those in charge recognise the need for change. Trying to bring about change before the need has been recognised as mission impossible. Even the chief executive cannot bring about change single-handed—a 'critical mass' of people within the executive team must also be convinced that the status quo is unsustainable.

So, anyone who wants to champion some kind of major change should start by taking stock of the situation in order to determine the chances of success. For major changes to take place, there must be sponsors for the change—people who have the power to legitimise it. When the sponsors have granted their stamp of authority, the desired change is no longer a mere wish. It becomes policy and resources can be made available more easily. This does not ensure that the change will happen but it is an essential first step. The sustained support of the sponsors will be required. This means that the sponsors need to understand what they are getting into and be prepared for the long haul.

If the management team does not recognise the need for someone to provide expert guidance (change agent) then the organisation may set out on this journey with everything else needed for success except someone who can read the map. No organisation has complete control over its own destiny. All are subject to many external forces. However, an organisation that does not have the autonomy to make its own decisions may not be able to carry through major changes, or may face greater risks in doing so.

There are times when management has to focus all its attention on some issues that are critical and almost every thing else has to be put on the back burner for the moment. This may make it hard to win support for other parallel changes, unless these can be linked in some way.

Sometimes there are several internal problems that make it difficult to execute any type of major long-term project, *e.g.* terrible relationship with employees and unions, rampant internal politics and functional fiefdoms waging open warfare with each other.

Skill 2: Engaging People

Successful change needs the following approaches:

(*i*) Providing advance information about impending changes so that people can begin to get used to the idea.

(*ii*) Providing people with enough information to enable them to understand the need for change.

(*iii*) Involving many people at all levels.

(*iv*) Setting up additional mechanisms for intensive communication.

(*v*) Seeking to compensate in some way for the losses that some people will experience—such as loss of status, security or choice.

(*vi*) Marketing endings—such as the closure of a facility.

(*vii*) Providing empathy and moral support when people are becoming 'stressed-out' by the changes.

(*viii*) Providing practical support: the training and tools required for new tasks; expert coaching and guidance; team efforts to enable people to learn together and support each other.

Skill 3: Planning and Project Management of the Change Process

Any significant organisational change is a complex undertaking involving many people and countless decisions, both large and small. The following issues require attention at each stage in the process:

(*i*) *Develop a widely-shared vision and desired future state:* The more opportunity that people have to discuss, challenge and contribute to the development of the organisation's directions, the more it will mean to them. Organisations that have used this type of approach have found that the resulting vision is stronger then senior management could have produced on their own and the vision is much better understood and more relevant to employees.

(*ii*) *Assess the current change and identify strengths and opportunities:* A thorough understanding of the current state is essential before any kind of change can be planned. We cannot decide the route to our destination unless we know where we are starting from.

It is a sound practice to interview a cross-section of staff at all levels and in all departments during fact-finding. It is also beneficial to make use of outside expert to provide perceptive factors and to enhance the credibility and objectivity of the findings.

(*iii*) *Select key strategies and develop detailed plans:* Before planning process is begun, there is a wide divergence of views

regarding what needs to be done. Each member of the leadership team was focussed on departmental and personal goals and each had a different, incomplete understanding of the current state.

However, once everyone has the same comprehensive understanding of the current situation, everyone starts coming to essentially the same conclusions regarding what needs to be done. Once this happens, it is easy to choose a few strategies that everyone will buy into.

(iv) Execute the plans: Executing the plans successfully usually means paying attention to the following issues:

(a) *Support infrastructure:* Support infrastructure—for coaching, facilitation, education and training—is a critical success factor for implementing the changes.

(b) *Communications:* Excellent communications are vital to successful change. The normal channels of communications may not be adequate or even appropriate and additional mechanisms may be required.

(c) *Education and training:* Most organisational changes call for significant education and training, if the process is to be successful and this is often one of the most significant and costly components of the process.

(d) *Measurement system:* Before the process begins to unfold, it should be possible for everyone to answer the question "How will we know that we have been successful"?

(e) *Monitoring of progress:* Any change initiative inherently involves more risk than routine operations. It may be necessary to have separate review process, a different agenda and a different set of information and measurements to review.

(v) *Study the results and adjust the plans based upon experiences:* When progress is being reviewed, leaders are often instinctively hostile to any suggestion of shortcomings in the current plans, feeling that these may be attacks on their competence. They may interpret honest concerns as 'opposition' to the goal, shoot the messenger when there is bad news and underestimate the significance of early signs of trouble. They

may unintentionally put great pressure on others to put a positive spin on all that is happening.

A good review process will facilitate a more productive approach by embodying the following practices:

(a) Use of reliable information to understand what is going on, both good and bad.
(b) A practice of searching for the causes of problems rather than casting blame upon the individuals concerned.
(c) Consciously creating an environment where participants are encouraged to voice concerns rather than being punished in some way for doing so.

3. CONCLUSION

Creating organisational change is a great challenge but it is not an impossible task. High performing organisations are adept at responding to rapidly changing circumstances by implementing a constant stream of changes in their products, services, processes and methods.

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Managing Change through Education and Training

ABDUL RASHID, BASHIR AHMAD AND
UMDAT-UN-NISA

ABSTRACT

In the context of ongoing developments in information technology and its applications it is imperative that library and information centres must develop new skills. The paper outlines the programme for developing new skills. It is based on education and training of professionals in LIS.

I. INTRODUCTION

Change is the fact of life. It occurs in the organisation whether we plan it or not; whether we realise it or not, both from the internal and external influences. That is why it is said that all management is the management of change. Technology is perhaps one of the most important specific forces which acts as a powerful stimulant for change. Rapid changes in technology and the sophisticated information systems constantly keep influencing the nature of work. With the result, there is regular need of widespread changes in the required skills, the levels of employees, the daily activities of managers and the organisation's ability to respond to the changing needs of customers.

2. EDUCATION AND TRAINING

2.1 Notion

Education modifies our behaviour; and training is a means of reorienting ourselves with the knowledge, skills and work habits to do the

job the organisation expects us to do, in the manner, to the standards and in the time required.

3. NEED FOR MANAGING CHANGE THROUGH EDUCATION AND TRAINING

(*i*) Change is the law of nature. Who could have imagined that the whole structure and information resources of a library and the role of a librarian will change in a dramatic fashion. The recession and the escalation of the pace of technology change has given birth to a virtual library. Therefore, we the librarians, keeping in view our changing and dynamic role, need to learn to live effectively with continual change—*to constantly reassess ourselves, our skills and jobs* and if we fear change, find it threatening or fail to cope with it then we could sink without trace.

(*ii*) We should know the basic skills concerning how to manage change. A variety of methods can be used, because change affects people differently. Other problems that cause change initiatives to fail are *lack of training and not measuring whether the change is working.*

(*iii*) The services of the present hybrid library are based as much on access to digital information as on access to physical objects and in particular where users are much more mobile and present their demands at a variety of service points across a network. Services are expected to evolve rapidly, new technology need to be exploited and *this is possible through effective education and training.*

(*iv*) *Proper education and training* are sure to help us to attain the status which our counterparts are enjoying in the West and will alleviate the stagnation threat.

(*v*) Users intend to complete their course works only in a library because of its long opening hours and relative security and the availability of information, it is *obvious home for a computer lab.* The presence of these facilities is placing demand on staff to assist in their use. This will also require library staff to have a wide *understanding of the use of IT in library* in order to provide useful and satisfactory service.

4. RESISTANCE TO CHANGE AND WAYS TO OVERCOME IT

Library staff, particularly older staff, who deem their university degree obtained a decade ago, as a qualification for life, are mystified by what they call 'the terrifying technology' and naturally resist it because they see it as a threat to their jobs and status. Moreover, there are staff members who find it difficult to work in an everchanging environment This is in contrast to the past when work in a library was seen as the quickest job on the earth. The reality today is that a library is under pressure, is in continuous transformation and trying to access to all information resources for every member of the community it has to serve and therefore, requires enthusiastic librarians. We have no dearth of such librarians but non-enthusiastic people (better to call them 'non-professional librarians') stand obstacles because many libraries are still over-dominated by such people. These people are also reluctant to undergo a training programme because they feel that after joining back, they will continue performing the same jobs without any promotion avenues.

Usually staff members leave the services of their respective parent organisations after getting training and join other organisations for better paid jobs. Thus, the organisation after investing a substantial amount and time, is deprived of the skilled manpower and hence the organisations do not like to take such risks again. Experiences have shown that inspite of legal undertakings, people join other organisations. On the other hand, some enthusiastic librarians proceed on leave without pay for undergoing a training and the training, and related costs are borne by them themselves. On joining back, when they donot see possibility of better prospects, they join other organisations for better jobs. Therefore, the question that they do not serve their parent organisations is of little importance because wherever they serve, *they serve the society.*

A good external training course is much time consuming and costly, which every organisation cannot afford. Short duration courses like the one run by NISSAT and other institutions are no doubt adequate for basic awareness of an individual aspect of new technology or information needs but they have limited scope and level. Similarly, a series of short courses cannot meet the requirements of the emerging trend of IT. These are suited to develop specific skills rather than

the broad IT knowledge required by the information world. Full-time and longer duration courses may prove effective but the question arises: whether the organisations are ready to bear these expenses and time of the staff ?

So far as external training is concerned, we have no alternative but to get a few staff members fully and regularly trained, who in turn will train the whole staff. The senior staff where managerial skills fail to motivate them to embrace IT, may be left behind for some time with outmoded skills and knowledge to carry on the other work.

Every professional, particularly in today's thrusting, highly competitive marketplace should deem it as his sacred duty to develop his professional capabilities on an on-going basis. Nothing goes waste; today or tomorrow one will reap the fruit of one's efforts. It is therefore, recommended to adopt the distance learning and self-learning mode of training for cultivating the right perception and requirements of IT.

Most of the library and information schools in India are still producing traditional graduates without any know-how of IT and other recent trends of information science. Many fresh graduates of these schools join private institutions for undergoing a training in IT. But the most of the employers know that the holders of Masters' in Software Engineering from such institutions have virtually no understanding of computing and an extremely limited and obsolete range of skills. A dubious certificate from ". . . American University" that is not legal in the US itself and a cent per cent placement that they offer usually means a job as a data entry operator. Thus, alumnus of such private institutes know that all they got for their thousands of rupees in fees and hundreds of hours of time was just an unpleasant initiation into computing. The curriculum of library schools needs to be extensively restructured keeping in view the present and future demands and attract bright students and faculty. The faculty should have an in-depth knowledge theoretical as well as practical of IT.

The top management also do not realise the importance of education and training and the result is:

(*i*) reduction of the budget for training;
(*ii*) lack of provision for adequate equipment;
(*iii*) unrealistic expectations from the system;
(*iv*) lack of sympathy with genuine difficulties; and
(*v*) low status and credibility for the staff

Top management should be impressed upon the need and importance of education and training. They need to understand that training is not something which we get when we have a problem that needs correction. It should be rather an open door leading to regular honing of our abilities. Ongoing training is a real necessity and ignoring this is a false economy.

We have invested and continue to invest very heavily in IT. But as already discussed we are faced with an avalanche of change, and at a rate which is difficult to absorb. It has profound consequences for us all, which we ignore at our peril. So this investment in IT and its training poses real risks of early obsolescence.

This problem can be solved to a great extent if the library selects the most suitable systems, which are easy to upgrade and network, change supplier etc. in order to fulfil the vision of the future. It must however, be noted that the systems should not be unnecessarily upgraded or replaced merely for the sake of change. The system should be allowed to continue if it satisfies the needs and fulfils the previously defined aims.

Rest of the problems, we think, can be solved by the managerial skills. A manager should be decisive, consistent and flexible, one who can provide a sound framework in which the individual can progress and experiment, who encourages people to face challenges and extend their boundaries by inspiring confidence and encouragement, and can create a powerful and motivated team. He should try to formulate and implement the fixed career policy of his team as is in vogue in Japan. No employee will leave his parent organisation till his hierarchical needs are fully satisfied.

In short, resistance to change will be reduced by the development of a culture of life-long learning

5. DEVELOPING A TRAINING PROGRAMME

Wise are those who learn by the experiences of others and in order to gain from the expertise of others, it is better to talk interact with other organisations who have worked or are working in similar situations. To avoid tension and conflict; to win confidence and support; and to drive the organisation on the way leading to success, it is recommended to listen to the staff and clients and act upon their valuable suggestions also. Accordingly, a training strategy must be arranged

for each and every user; and all users be informed clearly about how their responsibilities will alter with the introduction of new work practices.

5.1 Aims and Objectives

The training programme should be closely related to the mission, aims and objectives and each member of the staff as well as user needs to know specific training objectives. Lantz (1987)[1] has identified following aims:

5.1.1 General

- permit the library to carry out its obligation to utilise the most appropriate technology in providing cost effective services to users;
- provide library staff with the skills to operate systems appropriate to their jobs;
- provide an appropriate level of computer literacy which will assist all library staff in performing their existing jobs more effectively;
- provide library staff with the new skills which will assist them in achieving career advancement both within the library and externally;
- provide a forum for people to exchange information and ideas on successful as well as not so successful applications of IT.

5.1.2 Technicians

- provide basic skills in computer communication, maintenance and operation; and
- provide an understanding of the problems faced by novice among users of computer equipment to enable them to follow appropriate operational instructions

5.1.3 Professional Staff

- provide an understanding of the range of applications of IT so that they are able both to envisage practical applications and to understand the scale of the longer term commitment of resources required to ensure continued development;
- provide an understanding of the use of computers in teaching and learning; and

- provide the basis for good practice in collection development of computer based materials

5.1.4 Users

The users, the ultimate beneficiaries of the systems also need training as this will go a long way in enhancing the importance of a library and status of library profession. Therefore, *every user regardless of his physical location should be able to use all information resources available in the library or anywhere in the world.* For this purpose, it is recommended that in addition to the training and education of IT, a programme of Information Teaching skills be also started.

5.2 Who be Trained?

All staff sooner or later need training. As already discussed, leaving aside for some time those, who resist the change; there are people who wish to drive the organisation forward. Therefore, the organisation should provide support, opportunities, tools and environment to them for effecting the progress. We should identify the skills of such people and establish a written list of skills in short supply and who would best benefit from training in specific essential skills. We can then use this list as a basis for planning training. Hill (1997)[2] has suggested the following ways for identifying the training needs of individuals:

- through appraisal and performance reviews;
- by noting down errors or shortcomings;
- introduction of new technology;
- asking individuals if there is a specific training that they feel would help them;
- change in procedures or perhaps legislation;
- keeping aware of current issues in information work; and
- changes in job responsibilities or staffing levels.

5.3 When Training be Done?

The library should make sure that all necessary relevant training is started before the implementation stage, because people need to know what to expect in terms of changed working conditions, job specifications, responsibilities, new relations with colleagues and readers as well as the details of actual day to day use of the projected systems. Burton and Petrie (1991)[3] say that the training period will also provide a further and early opportunity to assess the new system and its

operations, and any new feedback from staff should be studied carefully before preparing the operating system.

It must, however, be noted that initial training programme is not in itself enough; it should be a part of continuos process. It will help the library to keep its staff abreast of the latest techniques and to impart training to the new entrants. Moreover, additional workshops should also be provided as and when the software and hardware are updated. It is also recommended that professional staff should be deputed to attend the latest IT exhibitions, conferences, advanced training courses etc. held elsewhere in the country or abroad.

5.4 Internal Training and Internal Trainee

The first stage of the programme should be to develop the trainees. It is better *to light candles with a candle* i.e., to have a few chosen professional staff (trainees) trained regularly and also to give them the training skills to pass on what they have been learning. This is essential because an internal training programme may not have the resources to deal with all topics in new technology, which might be of interest to the library. Secondly, as already discussed, the trainees in turn will train the entire staff. The later objective will prove effective because being already familiar with the personal skills of their colleagues (Trainers) and, thus, will provide active user-centred learning environment. A trainee will generally be well-equipped for his task; he normally succeeds to tailor information to the needs of the novice and contrary to the external training, he will not appear to reinforce the fears of potential users but he interacts on a one-to-one basis with trainers, meeting their individual needs and providing remedial help and encouragement as necessary.

There are many specific professional meetings run by associations and their Special Interest Groups such as Computer Applications, Industrial Information, Informetrics etc. We should encourage our staff to join these associations and attend their meetings, seminars, conferences etc. The spirit of belongingness to such professional associations will naturally inspire the people to take responsibilities for their own personal and professional development.

Some institutes like Academic Staff Colleges, ISTE, INFLIBNET are providing not only free training/refresher courses but also pay TA/DA to the participants. In order to take advantage of such opportunities, library staff should be deputed to attend these courses.

A calendar of training events both of *longer and shorter* duration is usually available either from the organisations or appear in professional journals and the University News. Moreover, many institutions like IGNOU are providing flexible, distance and open learning courses in the provision of library and information science, computer applications etc. for continuing professional development.

5.5 Where should Internal Training Take Place?

Training is always better done at the workplace. No doubt, it is difficult to concentrate with phone calls, interrupting colleagues etc. Prior to the practical training, a few lectures are recommended.

It is important that the trainees take care of the following consideration:

1. at the outset the phobia of terrifying technology be demystified. Moreover, the staff who resist a change need to realise that they possess the ability to achieve the expected standards or to cope up with the changed environment that IT portend;
2. in the introductory courses, simple language instead of technical jargon be used; and
3. unless trainers achieve a pre-determined standard, he be not relieved from the training programme.

5.6 User Groups

It is also recommended that the library staff be also encouraged to set up an IT working group within the library and affiliate it with other user groups at the local, national and international level. Such groups are a useful way of learning from other peoples' experiences. Such groups like that of CDS/ISIS user groups often arrange regular meetings with emphasis on overcoming problems.

5.7 Review the Programme

Provision should be made to monitor and evaluate the usefulness of a training programme, whether internal or external, immediately after its completion and on a continuous basis thereafter to check if it is satisfactorily fulfilling the previously defined objectives. Moreover, training profile of each individual must be recorded on his personal file. These records form a valuable achievements, which can also go a long way towards further funding for training in future.

It is also recommended that every staff member who undergoes a

training programme be asked to give a brief presentation to his colleagues about the programme. This presentation will help the people to learn communication and learning skills and will also help other members to keep themselves abreast of the latest developments in the field.

6. CONCLUSION

We would like to conclude by quoting Medhurst (1995)[4] who says that in the light of the recent developments such as the Intenet, the information super highway and the increasing shift towards end-user access to virtual libraries, we need to ask ourselves: *will we still be around in the century, and if so what we will be doing?* The answer may be positive provided we come out of the four walls of the library and take a more active role in the information gathering processes by continuously and rigorously refining our skills. We may supersede others who are supposed to replace us because we possess the knowledge and expertise to offer guidance in the post-industrial society—a society based on effective exploitation of information. Since the services of a library are becoming more and more commercialised, we should develop an adequate awareness of business and other organisations and of the management of the information work. It may also be noted that training is not necessarily just about learning new things, it can also mean having the skills and abilities that have been learnt informally (through professional participation and development) reinforced in a formal way.

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Quality in Library and Information Services: Managing Change through Information Technology

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ABSTRACT

The paper discusses need for quality improvement in libraries and library services and emphasises importance of adopting new techniques in information processing and retrieval. It defines various tools available for managing this qualitative change and their application in LIS. It also discusses advantages of use of IT in libraries and problems in implementing IT.

1. INTRODUCTION

Improving life-style of mankind in present times is a direct outcome of expansion in our socio-economic base and of new facilities, infrastructures, services, institutions, enterprises etc. we have come to acquire. There is an urge now to initiate conscious efforts to improve quality at every level so that the country as a whole is recognised for high standards and excellence. Quality factor is equally relevant to libraries and library services. Today we are living in a world of exponential growth of knowledge which is dynamic in nature.

Now when the society has entered the 21th century innovations in the field of information technology have led to unbelievable discoveries and improvements in electronic publication and dissemination of information. New tools of information retrieval have enabled faster processing of information and provide vast opportunities for efficient and reliable services.

In the words of father of Indian library science Dr. S.R. Ranganathan:

> "A library is a public institution or establishment charged with the care of a collection of books and the duty of making them accessible to those who require use of them".

The concept of library and librarianship is not a new one but it is an age-old concept, which is changing eversince. In the post-War period and specially in Third World countries like ours, books became the major medium of storage and dissemination of information, but now this image is slowly changing with the changing information storage media *i.e.* from stone to palm leaves, to paper and to electronic storage devices like floppy disks, CD ROM, DVD (Digital Video Disks).

Although this concept of paperless society is gaining weight some in all the developed countries of the West, in India, it will yet take time to completely transform the society from paper to paperless. The concept of paperless society can be however achieved and handled by the application of information technology.

Using this technology, the modern librarians can handle information, more easily, accurately and speedily. IT paves the way and guides the user in the chaotic sea of information. However, but there are hazards in application of IT.

IT proves to be a boon for libraries in the modern society and therefore, libraries are considered both as pilots and life-boats of the new information age.

2. INFORMATION TECHNOLOGY

Generally, the term information management is used interchangeably with information technology, as they are closely associated to each other but there is a difference between the two. Here the focus is only on information technology.

Few definitions, which make the concepts of information technology more clear, are highlighted below:

(*i*) Information technology, refers to acquisition, processing, storage and dissemination of vocal, pictorial and numerical information by a micro electronic-based combination of computing and telecommunication devices. (Rowley: 1988; P.1).

(*ii*) Information technology in today's context means convergence

of technologies that are useful and profitable in their own right to form together a powerful new approach to information storage, transfer and retrieval.

(*iii*) The phrase 'Information Technology' at the outset, appears to be more generic having wider implications. However, the phrase for the purpose of present discussion, primarily refers to a set of computer and telecommunication related technologies exclusively associated with the task of information acquiring, processing, preserving and disseminating irrespective of its location, purpose and organisation.

2.1 Need for IT in Libraries

Information technology can be profitably applied to library services in view of following advantages and necessities:

(*a*) Information explosion
(*b*) Rise in the cost of print media
(*c*) Change in the profile of library users (*viz.* competition, political, legal and physical aspects)
(*d*) Space problems
(*e*) Informationalisation of education
(*f*) Scholarship
(*g*) Change in the mode of service *i.e.* from collection based services to information based services.
(*h*) Business and knowledge through Internet and global information Superhighway etc.

3. FACETS OF IT

Various facets of IT *viz.* media, tools and gadgets are growing and changing very fast. It is having drastic influence on the environment of libraries and their way of working. Some of these are:

3.1 Audio and Video Technology

Although this tool emerged quite early yet its potential was tapped by libraries after quite some time when many libraries in USA started using video technology for recording and displaying of visual information, this in turn reserved the place for video cameras and video cassettes in libraries.

3.2 Micrographic Technologies

In order to develop and manage their collections, to reproduce and preserve library material and to reduce storage and binding costs, libraries have used microforms. Besides as the times moved on, the feasibility of micrographics emerged as one of the most viable tools. Several institutions and associations regarded to be the pioneer in implementing this tool to LIS are Harvad University, Brown University, St. Louis University, the University of Texas, the Bancraft Library, the American Council of Learned Societies, the Modern Language Association and other organisations.

3.3 Optical Technologies

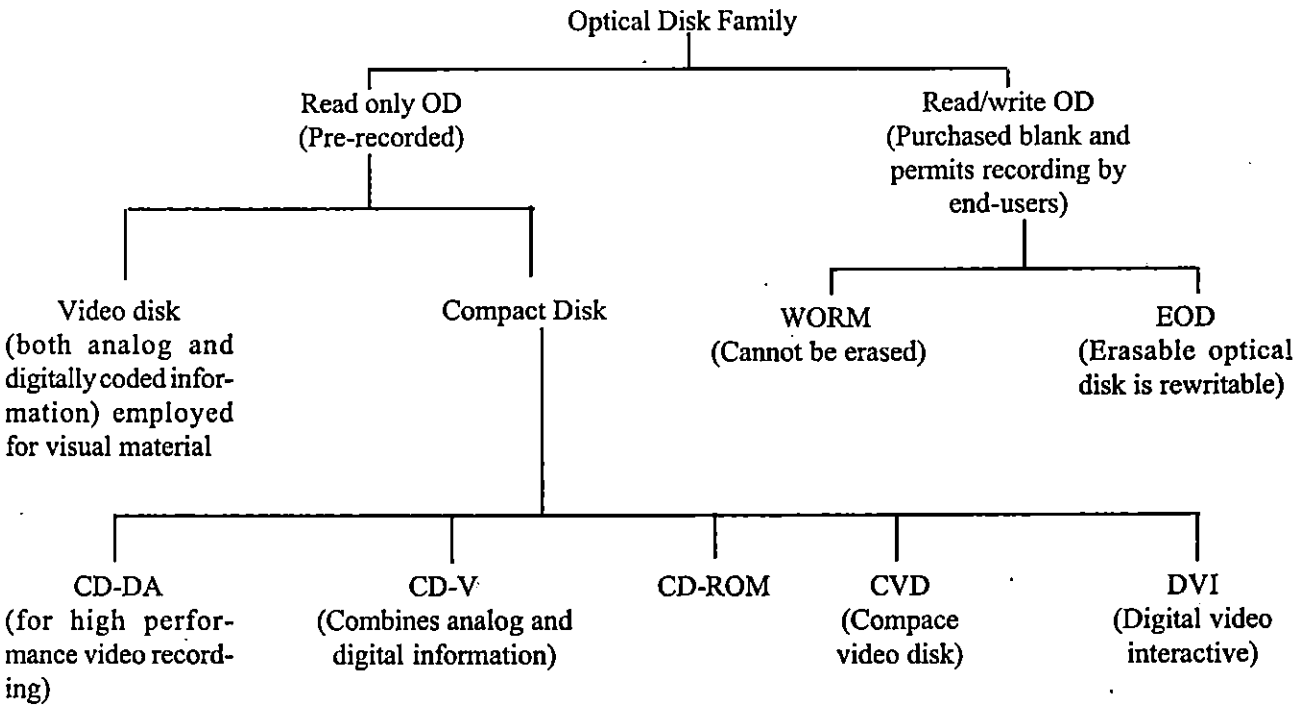
Optical storage technology, its concepts, product developments and applications became a topic of discussion in library circles in 1985. The various branches of optical disks are described here under inthe figure on next page.

3.4 CD-ROM

CD-ROM can be considered as the modern papyrus and can also be regarded as a library fact-file as it has created a revolution in the LIS field. It was jointly introduced by Sony and Philips in 1980 and after five years of its commercial introduction, it became a subject of considerable interest to information management professionals. Since then, CD-ROM has been used extensively by the library professionals in numerous service areas such as Online Public Access Catalogue, Books-in-Print, reference support, cataloguing support, collection development etc. All the twenty volumes of *Oxford English Dictionary* are available on CD-ROM.

3.5 Video Disk Technology

Video disk, the second group of read-only optical disk, contains digitally coded information. Digital optical video disks, on the other hand can store computer processible, character coded data, or digitised documents and images. As a result, several libraries in USA and other European countries have resorted to this technology in their library application as a viable storage medium. The popular video formats found in libraries today are Betan, VHS and Philips V2000.


Optical Disk Family
Read only OD (Pre-recorded)
Read/write OD (Purchased blank and permits recording by end-users)
Video disk (both analog and digitally coded information) employed for visual material
Compact Disk
WORM (Cannot be erased)
EOD (Erasable optical disk is rewritable)
CD-DA (for high performance video recording)
CD-V (Combines analog and digital information)
CD-ROM
CVD (Compace video disk)
DVI (Digital video interactive)

3.6 Satellite Technology

Satellite technology has been used for international video and voice transmission since the 1960s. It can be used effectively for LIS activities but it entails a high capital investment thus rendering it out of reach for individual or small organisation, or even medium range libraries and information centres for transmission of information. Yet it may not be kept in abeyance as new technologies are emerging faster, rather it may soon act as the buzz word among information management professionals to cafe with the time.

3.7 Facsimile Technology

This technology is an old one but earlier attempts of using it are all in vain because of rudimentary nature of equipment, the high cost, and a lack of understanding of the pace of technology with the library service. But the new machines transmit digitized data faster and are more economical on telephone time.

3.8 Video and Textext Technology

Both video text and teletext fall under the category of video-based information system. The term video text, refers to interactive systems of transmitting text or graphics stored in computer databases via telephone network, for display on a television screen.

Since video text is simple to use, low-cost information system and catering for large number of users, it is being used, developed and implemented in USA including the one developed by AT & T and the Bell system as a mark of national identity. Similarity, Teletext service in UK-Ceefax and Oracle are accepted as model services but in India, teletext service is yet to take its proper stride.

3.9 Hypertext and Hypermedia Technology

In order to cope up with the twin problem of information explosion and recording the information in sequential and linear fashion, the concept of Hypertext was evolved in which the information is represented in a non-linear and non-sequential text which is a more natural way. Therefore Hypertext technology offers the users the flexibility of manipulating documents in new ways.

3.10 EMM Technology

The electronic mail and message system (EMMS) means any message that uses a mail box for storing, forwarding and accessing message electronically. In this technology, the motion of paper as the medium of the message is discarded. There are different types of E-mail options such as (*i*) Telex based E-mail (*ii*) Teletext based E-mail (*iii*) Facsimile based E-mail [*i.e.* Fax] (*iv*) computer based E-mail.

Though the concept of E-mail in the process of information transfer among the Indian libraries is in its infancy yet some of the institutions and libraries availing this facility are: DOE, CSIR, IITs, INSDOC, TIFR, IIS, BARC.

3.11 Voice Mail Technology

The first voice mail technology was introduced in India by MTNL (Mahanagar Telephone Nigam Ltd.) in 1992. Being a low investment service, this technology would further be enlarged according to the demand (*ILA-Newsletter*; Oct. 92 ; p. 5-6). However, time will tell the extent to which this technology can meet the needs of common man with cost effective measures in general and application in libraries in particular.

3.12 Bar Code Technology

Bar coding is an important phase of library automation. In the computerised circulation system the staff has to input data manually, which is prone to errors. To overcome these errors in manual operations and to achieve maximum efficiency and quality, the system can be further improved by entering data through bar codes. By implementing this technology, the counter management becomes simpler and quicker. The manpower utilised in manual work can be used to offer personalised service to users.

In the global information technology field new concepts like Hybrid-mail Technology; Multimedia Telephone Technology; ISDN; Cellular mobile telephone technology; telemed technology; Radio-paging technology have been introduced and these new technologies have their impact on the structure and functioning of library, however, the extent of its use in library, depends on how quickly people respond to it, and the degree to which this technology becomes customer friendly.

4. ADVANTAGE OF IT IN LIBRARIES

Some of the advantages of using IT in libraries are-

(*a*) Ability for generation of new services.
(*b*) Accommodation of increased workload.
(*c*) Facilitating co-operation.
(*d*) Achievement of greater efficiency.

Beside this the information explosion can be faced only by the application of IT and networks in libraries.

5. PROBLEMS IN SWITCHING OVER TO IT

Libraries and information centres are trying to adopt IT for their operations, but they are being affected by a number of external forces—political, economical, social, technological. The two major handicaps which the developing countries like India are facing while implementing IT in libraries are:

(*i*) *Financial:* Financial crisis occurs either due to the provision of inadequate funds or due to diversion of funds allocated to library for other purposes.
(*ii*) *Manpower:* Manpower crisis occurs because of lack of or non-availability of qualified professionals and due to deley in the appointment of information manager/chief librarian or lack of dedicated and committed information professionals.

6. CHANGING SCENARIO

IT and its various facets have radically changed the face of the present library system. These facets have significant impact on libraries as a modern library is smaller in size but bigger in respect of information storage and its retrieval. Thus, the vision: "LIBRARY WITHOUT WALLS" and "GLOBAL VILLAGE" or "GLOBAL SOCIETY" will come to reality and the information seekers can bring the world to their finger tips.

7. CONCLUSION

For the total quality management, organisation and development of libraries, we have to adopt various automation tools and technologi-

cal innovations. However one should keep in mind. that, it is not a panacea for all the situations. At this juncture, it is very difficult to predict in which direction this technology is taking us or in what way its future developments affecte us. Anyway, one thing is sure that there will be rapid changes. Therefore, we must be ready EMOTIONALLY, PROFESSIONALLY and FINANCIALLY to accept and make good use of new technology.

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