CHAPTER – 1

INTRODUCTION

1.1 Total Quality Management: Concept and Meaning

1.1.1 Concept

It is a general believe that in 21\textsuperscript{st} century, a new information society will likely to be emerged where electronic information will have a key role. The means of production in most of clerical and service industries have been largely automated. Thus libraries have also become computerized in house keeping procedures such as ordering acquisition, technical processing and circulation and in services to users such as online searching and CD-ROM etc.

The economic and political environment have greatly influenced on the amount of resources available to organizations and their library and information services and the libraries are constantly under pressure specially where increasing demands made upon them for services.

Quality, in general terms, relates to the ‘features’ or ‘character’ or some attributes’ of a product or services or similar offerings. The attributes of the product or services should be such that they meet and fulfill the requirement of users. To illustrate, lets take the example of a wrist watch. A person requires a watch which:

- must give accurate time
- must be durable and weather proof
- convenient to adjust time, data etc.
- the dial should be easy to read
- should offer value for the money i.e. cost-effective
- should meet any other specific or perceived needs, e.g., style and looks, and casing and casing material, band etc.
Similarly, any deficiency in the features or quality, from the viewpoint of users need will lead to other sale availing services or to complain about it. This means that failure on the quality front will cause users dissatisfaction and entail quality complaint. Thus, it is necessary to satisfy the needs of a user to make him a regular customer of the company or brand. The same principle is applicable to the library.

It is erroneous to assume that quality means something extra in the services for users. In reality, quality is an essential feature of a product or a service, which must be maintained for satisfying the given need of users. Quality is assured in products by conformance to users requirements. Quality is the totality of features and characteristics of a product or a service that bears on its ability to satisfy the given needs of the customer. Therefore, quality must always be built into the product or service to satisfy users needs.

It implies that in order to set meaningful quality goals aimed at satisfying users needs, the requirements of user must first be clearly captured, stated and defined in the form of quality specification, leaving no scope for misunderstanding. This quality specification should then be maintained in the service by appropriate means to satisfy the given needs of the users. In order to maintain and conform to the specification, users requirements as captured in the specification are first translated into design, then produced and delivered.

**Factors of Quality**

The implications here are that quality is to be viewed in its totality and not restricted to the quality of product and services; and such as these which form only a part of the organization activities. However, customer satisfaction has several dimensions, some of which are:

- Fitness of use
- Reliability – the life aspect of quality
- Value for money
After – sales service and support
- Packaging
- Customer information and training
- Maintainability
- Variety
- Speed and timelines of service
- Civility of service at all levels
- Image of the company and customer confidence

All these factors added together form an image of the organization, good or bad, as a customer would see it. The confidence of customers will be determined by such an image that will have a major influence on the market credibility of products or services of an organization. The organization is just as much affected by the attitude of employees who are in contract with customers as it is by its products or services.

**Towards Total Quality Management**

Professor Karou Ishikawa is said to be the pioneer in developing a new system of management that combines all the beneficial ingredients of both systems viz, craftsmanship and scientific management but avoiding all their disadvantages. Taylorism (Scientific management) has never been challenged in the Western World because it has been assumed that Taylorism and Craftsmanship are mutually exclusive and therefore incompatible. Ishikawa’s effort was to introduce a hybrid variety of management, by bringing the craftsmanship element back to groups of people rather than the individual; yet retaining all the plus points of Taylorism. This is the essence of Total Quality System.

Total Quality is a very human concept. It is based on several human feelings and behaviour such as the following:

- Recognition of achievement is very important to people.
- People like, and feel a need, to share their experience;
• Group achievements have the effect of group bonding and creating a sense of belonging;
• Success breeds success – people are encouraged by achievement and feel a need to equal or surpass their best;
• People want to be listened to and to feel important;
• No one want to feel like an extension of a machine or a desk;
• Everyone want to have an opportunity for continuous self-development and self respect;
• If you treat people like responsible human beings they are likely to behave like them.

These principles are absolutely fundamental to achievement of total quality and are almost the opposite of Taylorism and Scientific Management.

Development of Total Quality Concept
Deming’s quality philosophy was based on improving services by reducing uncertainty and variability in the design and manufacturing processes. This moved the emphasis from resource inspection to ‘process improvement’ through statistical checking and data analysis advocated by him. In Deming’s view, variation from specification of parts is the chief culprit for ‘poor quality’. Poor quality means inconsistency in achieving quality specification. As a result, companies fail to provide value for time, for a resource. This leads to user’s complaints and dissatisfaction among them. This means loss of reputation and declining service.

Similarly a variation from any committed service leads to user unhappiness and damages a library image. To achieve reduced variations and increased conformance to specifications, he advocated a cycle as follows:
There are three major aspects of quality management, called the **Quality Trilogy**. These three aspects are:

1. **Quality Planning**: A process for presetting the quality goals and preparation to meet the goals.
2. **Quality Control**: The process for ensuring that quality goals are being achieved during operations, and
3. **Quality improvement**: The process for breaking through to higher levels of quality for superior performance.

As per Juran, planning for quality starts with identifying users and their needs and developing the resource quality features for meeting those particular needs. Juran identified customers as a critical factor in determining quality goals, and prescribed establishing control methods that meet the needs of users. Quality Control should be invoked to:

1. Determine what to control,
2. Establish measures and measurements,
3. Set standards of performance,
4. Evaluate performance versus goals and standards, and
5. Finally, take actions on the differences.

### 1.1.2 Total Quality Management (TQM): Meaning

Total Quality Management is now an influential concept. It is a Japanese concept of quality and statistical measurement technique which focuses on effort of all employees on a day to day basis towards improving and maintaining the
quality of the company’s products and services. Its aim is to ensure complete customer satisfaction. Thus matters of quality have been at the forefront of changes in higher education also. Total Quality Management (TQM) is focused on the requirements of the customer. A library patron or user is a customer. He or she is demanding a service and expects that service. Total Quality Management offers an approach for an organisation to design processes, policies, and jobs so that they are the best, most effective methods for serving users’ needs, eliminating inefficiencies and assuring quality service, TQM is an important strategic management tool and a systematic approach with strong internal and external customer orientation. “Quality as a management tool especially for non-profit organizations like libraries.” This service is defined by library users in the TQM context. Since user’s need will continue to change, quality service will require a continuous improvement process Libraries will continue to:

- Identify customers’ – who matters?
- Identify customer expectations or needs – what do they want?
- Translate customers expectations into operational processes – what do we need to do to meet users’ expectations?.
- Decide on how to measure services – how will we know how we are doing?
- Conduct evaluation of services based on established performance measures – what processes should we continue or change?

These issues stated above confronts the libraries. This is all because the user’s need will be continued to change and the library is expected to meet their needs. This is possible only when the managers of the library will keep on evaluate their services.

Total Quality relates to the quality management system of this total library process across the organizational functions and processes. It is not simply the end-quality of the services.
Total Quality is thus a library-wide quality coverage for ensuring quality in all things necessary to be done in a library for providing services to users expectations and delight. In total quality system, quality is the outcome of the collective actions of all members of the library, because people run the processes. All members include not only all the employees, but also others who are either cooperative in the library process. Management of total quality, therefore, begins with determination of user requirements and ends with the fulfillment of their requirements by achieving users satisfaction and delight. The suppliers and the library on fit between these two end points. Towards this end, library resort to user focused internal processes for ensuring results, i.e. users satisfaction.

Total Quality Management therefore emerges as an integral part of strategic management of a library for excellence in performance and superior results. The essential approach to Total Quality Management is to promote a work culture that empowers people of the library and motivates committed action aimed at users satisfaction by providing targeted quality at lowest cost. In order to bring down cost of quality, TQM lays due emphasis on getting things right the first time….every time.

1.1.2.1 Difference Between ‘Quality’ Management and ‘Total Quality’ Management

Conventional quality management approach focuses on ensuring that the users get a defect-free service. The service based on users needs, the approach now becomes service orientated, an alignment taken care of by management through ‘Quality Control’ and ‘Quality Assurance’ activities. For this purpose, management sets up a Quality Control Department to ensure that specifications are met. This approach often leads to a situation where the Quality Control Department becomes saddled with the sole responsibility for service quality and attending to users complaints in a library or other service agencies, are thus able to side-step responsibility for any deficiency.
In contrast, TQM approach focuses on the quality and appropriate-ness of processes that are carried out in the library for delivering the reading material or services to the users to their satisfaction. Here, emphasis is on user satisfaction. This is achieved by making all employees involved in those processes through ‘internal users’ system. As a result, everybody in the library feels responsible for meeting the user needs….or even ascertaining what they actually are, in the first place! It’s a team approach to quality, right down the line.

Thus, approach to conventional ‘Quality’ management is service orientation, whereas approach to ‘Total Quality Management’ process staff and user orientation.

Service orientation of quality management system often lacks in providing certain features to continued library success, viz.:

- how to ensure quality superiority (of product or services) over the competition?
- how to retain users?
- how to provide better value for time to users?
- how to cope with changing needs of users?
- how to get total commitment of all staff for continued users satisfaction?

With the opening up of global competition, focus is on winning and retaining users with superior services. It is better to retain one satisfied user than to win ten new ones! With ever-increasing pressure for library performance, a narrow view of service orientation in quality management has become an inadequate survival response. A more comprehensive model of Total Quality Management (TQM), encompassing users, staff, processes, policies and resources of the library has become the ‘new mantra’ for library wide quality management.

Total Quality Management aims to ensure quality of all processes and activities in the library in order to fulfill the expectations of users. All processes under TQM strategy are, therefore, focused on users needs and driven by the people in the library. Everyone associated with the processes are considered as ‘links-in-the-
chain’ a chain running horizontally across all the functions in the library. This is in contrast to conventional Quality Management where vertical boundaries of different functions often insulate outputs with respect to quality, cost, cycle-time, delivery commitment etc. adversely affecting the goal of user satisfaction. These horizontal processes are managed in a TQM system by empowered cross-functional teams drawn from different functional areas concerned with the particular process. Cutting across boundaries, this cooperative, ‘internal customer’ modeled, people-driven approach ensures quality in a seamless flow that spans artificial barriers of function.

1.1.2.2 Distinguished Features of Quality Management

TQM philosophy was based on improving services by reducing uncertainties and variability in the function designing the service. This moved the emphasis from resource inspection to process improvement. To identify the causes of variation and uncertainty in order to improve the process, advocated the need for statistical thinking and use of statistical techniques for data analysis. Variations from the set specification are the primary cause for customer dissatisfaction. For improving to higher quality, the use of a never-ending cycle of plan-do-check and analyse (PDCA), using appropriate statistical techniques for checking and analyzing data. Operating processes might contain many sources of error or variation. Therefore, some understanding and application of statistical theory is a must for identifying the sources of variations and remedying the causes.

The improvement in quality should be led by the top-management. Management must have an aim, a long-term purpose….in other words, a vision, towards which the system-everybody concerned with the library the staff, users, vendors and others should continually strive for. Management’s job is primarily to optimize the system and not to sub-optimize the results by taking incorrect decisions. The philosophy of quality management is based on what we called ‘A System of Profound Knowledge’. Profound Knowledge covered four areas of concern, namely (1) appreciation for system, (2) knowledge of the theory of variation, (3) theory of knowledge, and (4) behavioural science. A system is a set of functions
or activities within an organization that work together to achieve its aim or purpose, and all the components of a system must work together harmoniously for the system to be effective.

It is important for top-management to appreciate this and appropriately install systems in the organization for achieving quality output. As regards variation, a process has a number of natural parts, like staff, collection, equipment etc. There could be variations within each of these parts and also a complex interaction of all these variations. There is a need for understanding statistical theory and approach for identifying, classifying and removing these variations from the process and resources.

Knowledge is the base for understanding, and there is no knowledge without theory. Experience alone does not establish or constitute knowledge. Thus, even to map out a success story, management should be able to understand the process from the theoretical point of view as well. Training and education of people in the organization are integral part of the process.

Quality of design should focus on appropriate sources features and design specification, which are obtained from market research on user requirements and perceptions. Quality of conformance requires attention to appropriateness of resources like technology, manpower and managerial processes, which are used for translating the design into acceptable products. Reliability and availability for use should focus on the reliability, maintainability and the logistical support. Quality of field service refers to attention and commitment for prompt and competent service, rendered with sincerity and integrity.

1.1.2.3 **Ten Steps of Quality Improvement (Juran)**

More focused on the responsibility of management to achieve quality. His emphasis is on systems and adoption of problem solving techniques. Juran’s ten steps to quality improvement are:
(1) **Build awareness** of opportunities to improve amongst people who are involved with the work.

(2) **Set goals for improvement in all areas of work.**

(3) **Organize** to reach goals. This is a management task to organize and facilitate the activities necessary for performance and realization of set goals.

(4) **Carry out improvement** projects to solve problems following the problem solving technique.

(5) Provide **training to people** to improve their skills and competence.

(6) Give **recognition for quality work** in order to motivate people and promote quality.

(7) **Report progress**: This is meant not for documenting the progress, but for review and communication of progress towards the goals for improvement. The progress should be made known to all concerned.

(8) **Communicate results**: Purpose is to communicate the results to those who have worked for it, and make them more committed and motivated for achieving better results.

(9) **Keep the score**: Management must measure the improvements and keep constant focus on the required goals through scorecards.

(10) **Maintain momentum** of progress by making annual improvement plans of the systems and processes. This emphasizes the fact that any improvement efforts cannot be intermittent activities. This has to be a continuous process, and can be made a built-in process in the organization’s systems by making annual improvement plans and continually working for that.

1.1.2.4 **Crosby’s “Absolutes of Quality” and his Fourteen Steps for Quality Management**

Crosby stated that ‘quality is free’, because the relatively small cost of prevention will always offset the cost of detection, correction, and failure. Like Deming, Crosby also prescribed his fourteen points of quality management. They are:
(1) **Commitment of top management to quality**: Quality begins at the top. To management has to be convinced for the need to uphold quality, and this philosophy of work must be communicated to all in the company in writing.

(2) **Team approach to quality improvement**: Crosby advocated that for improvement of quality to a target, there is a need for forming a team of competent library in departments to oversee and guide the improvement efforts. He felt that quality could be best achieved by promoting teamwork in the library.

(3) **Measurements of quality to identify the areas for improvement**: Process and standard of measurement must be established is appropriate to every activity in order to identity areas for improvement, because continual improvement is the key to the success of a library.

(4) **System for measuring cost of quality**: He recommended the adoption of practice of measuring the “Cost of Quality” in order to identify the areas of focus that would be most profitable.

(5) **Initiating corrective actions**: The purpose of any measurement or estimation is to identify areas for improvement, and improvement comes from taking corrective actions. Hence, the organization should have a system of initiating corrective actions as per the results of all measurement and analysis.

(6) **Promoting quality awareness in the library**: To promoting quality awareness amongst the employees, because they are the people who are involved in the processes for services.

(7) **Planning ‘zero-defect’ programme**: Crosby emphasized on aiming for zero-defect as a performance standard. Therefore, for monitoring and evaluating the progress and performance, there should be plans and programmes in the library, which should be reviewed by a committee.

(8) **Organizing supervisory training for all levels of employees**: Management must organize proper training for supervisory people in order to make them effective in all quality improvement programmes.
(9) **Setting goals for improvement by individuals and groups in the library**: There should be a system for setting improvement goals in a company, and all individuals and groups involved in the process of quality improvement should be encouraged to set their own goals.

(10) **Promoting work systems for performing error-free work**: Employees should have the opportunity to work within an established system that promotes error-free working. Management must ensure such a system by removing any problems that may prevent employees from performing error-free work.

(11) **Observe a zero defects day to stress upon quality standards**

(12) **Recognize those who meet their quality goals**: It felt the need for recognizing the good work done by employees for motivating them to further improvement.

(13) **Constitute ‘Quality Councils’ of quality professionals to share experiences, problems and solutions**: Formation of a quality council of experts for review of problem and means of solutions. He felt that such a system would promote exchange of ideas and help in speedier solution of problems confronting quality improvement.

(14) **Do it all over again for improvement**: There should not be an end to the efforts for quality improvement at any time. All quality management steps mentioned earlier should be continually followed for good quality management.

International Organization for Standardization (ISO) defines Quality as “the totality of features and characteristics of a product and service that bear on its ability to satisfy given needs”. This definition is the source of the conventional approach to quality management. Quality Control in the immediate post-war years, and later ‘Quality Assurance’ was first introduced during world war-II still largely practiced in various forms in industry. Many of these methods were highly inadequate in terms of depth of techniques to address all quality-related issues from the customers’ point of view. However, with the opening of the global economy and attendant competition, ‘Quality’ became a major driver for business
success, with its new orientation towards customer satisfaction and customer loyalty.

1.1.2.5 **Tools and Techniques for TQM**

Understanding and implementation of TQM not only involves imbibing the underlying philosophy, principles and strategy, but also a number of tools and techniques that come under its purview. These tools can be broadly divided into two categories: Tools for quality planning, and Tools for continuous improvement.

Important tools and techniques for quality planning are:

1. Quality Function Deployment (QFD);
2. Failure Mode Evaluation and Analysis (FMEA); and
3. The New Seven Management and Planning tools.

Tools for continuous improvement are:

1. Statistical tools for data collection, compilation, analysis and control;
2. Measurement of cost of quality;
3. Techniques for continuous improvement, such as Quality Improvement Projects (QIP);
4. Just-in-Time (JIT) service;
5. Benchmarking;
6. Re-engineering of library processes (LPR) for achieving benchmarked results in every aspect of the library and
7. Six-Sigma practice.
Role of Different Tools and Techniques and TQM

1. Setting up of internal library processes as per TQM principles.

2. 2.1 Establishing process capability using statistical tools and techniques, and improvement needs as per quality, plans
2.2 Reinforcing and revitalizing staff through training and development.
2.3 Determination of ‘Cost of ‘Quality’.

3. Continuous improvement of processes and services.

4. Determination of cost of improvement.

5. Re-engineering of library process (LPR) to minimize cost and maximize efficiency.

6. Benchmarking for what must e achieved and how?

7. Integration of and benchmarking to related library areas and processes.

8. Refinement of TQM practice and process based on improvement effort, learning/holding on to the gains.

There are a few other techniques, which are used either for quality planning or for driving the efforts for continuous improvement. These tools and techniques, supported by intensive training and development of people, form an integral part of operations of any TQM system, which in turn, helps in achieving certain primary objectives of the library.

1.1.2.6 Total Quality System in a library

TQM prepares the library for effectively integrating all its activities and functions in all respects, and at all levels, for total quality. In this context total quality refers
to means, measures and quality of the library services. Under TQM, overall effectiveness of the system should be greater than the sum of the individual outputs from the sub-systems. Therefore, the set up for TQM system in an library is based on systems and processes which are in synergy with each other. There are a number of TQM models that allow such a set up and administration of TQM process.

TQM system examines the approach, deployment and outcome of results from these process categories. For effectiveness of this system, the approach and deployment of each of these processes should be carefully coordinated to realize the synergies between them. The model of process categories starts with identifying values and vision of the library and integrates the processes with interactive cause-and-effect linkage between the categories of processes.

**Performance Excellence**

(1) Leadership
(2) Strategic Planning
(3) Customer Focus and Satisfaction
(4) Human Resource Development and Management
(5) Management of Process Quality
(6) Information and Analysis
(7) Business Result

The interactive nature of the process categories is illustrated by this total quality triangle, where the ultimate outcome is measured by superior library results. Essence of this ‘Total Quality Model’ is the drive for continuous improvement in all these process categories.
Therefore, to measure and estimate the effectiveness and standing, it is also essential under TQM that an ‘Information and Analysis’ system is adapted and encouraged in all activities under all the processes in an library. All the seven process categories are important in adding upto ‘Total Quality’ culture in an library though for auditing the effectiveness of TQM system some categories are given more weightage than the others, such as ‘Leadership’ and library results.

1.1.2.7 Application and Benefits of TQM

The paradigm of TQM applies to all libraries, be it a public, academic or special library. Wherever there is a user at the end of the line, TQM is application and has been successfully applied globally. However, the quality issues that are to be addressed in functioning and services differ in some respects.
Quality versus Services

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<tr>
<th>Function</th>
<th>Services</th>
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</thead>
<tbody>
<tr>
<td>1. Performance</td>
<td>1. Time to Serve</td>
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<tr>
<td>2. Reliability and consistency</td>
<td>2. Timeliness of the service</td>
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<tr>
<td>3. Conformance to specification</td>
<td>3. Completeness of service</td>
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<td>4. Durability</td>
<td>4. Consistency</td>
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<td>5. Serviceability</td>
<td>5. Courtesy</td>
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<td>6. Features</td>
<td>6. Responsiveness</td>
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<td>7. Aesthetics</td>
<td>7. Accuracy – first time right</td>
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<tr>
<td>8. Perceived quality</td>
<td>8. Convenience – easy to obtain</td>
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With the increasing influence of services improvement of quality of services is fast gaining priority. Though there are some differences of quality issues between functioning and service, they are both primarily aimed at users satisfaction and result in common benefits derived from satisfied user. Resultant benefits of TQM are many, and some visible direct benefits are:

(1) User loyalty and retention;
(2) Improved library standing;
(3) Greater collection and lower quality cost;
(4) Higher potential for service realization;
(5) Reduced cost; and
(6) Better library results

Indirect benefits are also many, but most important among them are:
- a positive work culture and value system throughout the library;
- revitalized staff and high employee morale;
- transparent and flexible library;
- social respect

These benefits ultimately culminate in a radical change in performance standard of the library and ensure continued growth in a users service. Thus, TQM comes full circle as a strategic tool for achieving excellence in performance of an library
by transforming the organization’s work culture and attitude towards its people users. TQM calls for a radical change from traditional management practices. If TQM is a process as a whole, then the people of the library are the key drivers for running that process for its users. In TQM practice, user comes first in any library activity and it constantly aims at total satisfaction of the users through continuous improvement of library resources and services.

1.1.2.8 Why Users and Staff so important in TQM?

Long-term effectiveness of an enterprise is a direct function of how well it manages its users, because users of a library are not dependent on it. Library is dependent on users! Therefore, any library management strategy must be focused on how best to take care of the users needs by satisfying them. Recognizing this, C.K. Sharma identified users as a critical factor in determining quality goals, which is why he advised libraries to proceed to establish measures and means that would meet the needs of users. Understanding and satisfying what users want is, therefore, the key to library success. Users satisfaction and users retention, more than anything else, are the common denominators of latter-day success stories.

It is, therefore, natural that users are at the focal point of all the converging process that are identified and practiced in an library under TQM for achieving the vision, mission, goals and library success, and TQM is all about the realignment and change of a library processes by placing users at the focal point of all activities in order to take care of their needs and expectations. To change the attitude of a library to user orientation, TQM strategy considers that the entire library process is a “chain” to deliver resources and services to the satisfaction of customers. All persons within are “links” in this chain. Chain of designing, and delivery of material and services to total satisfaction of users.

TQM demands needs of these on campus users are also to be articulated, planned and processed in a manner that satisfies their particular needs. This approach ensures quality at each stage, which is the key to ensure satisfaction of actual users.
Thus, people are drawn into the process of user’s satisfaction by this chain-and-links connection, which is one of the critical concepts in TQM strategy. TQM relies on people-motivated, trained, improvement-oriented and educated people-to drive the process of user satisfaction through their commitment of using library resources to their best and to provide value to users by means of continuous collection development and services. Drawing staff to the user satisfaction process of the library and providing transparent vision and leadership, makes TQM a users focused strategy where involvement of all the people in the library is necessary to drive the process towards successful end results.

For this reason, TQM is called a user focused, staff driven process, emphasizing the critical role of people in the process of achieving user satisfaction-a key performance index for superior library use.

1.1.2.8 Top Management Awareness

An awareness on the art of the top management about the organic approach of TQM, its constituent elements and the way it works in a library environment is of paramount importance. When the concept of TQM becomes clear, the top management discerns how much of it is already practiced in the library and where to focus for further exercises, how much of it is librarian driven and how much of it dependent on specialist tools. Awareness programmes should help top management to visualize the kind and depth of its own involvement in imparting effectiveness to implementation. The awareness enables top management to gain clarity on the adaptation processes of the elements of TQM with the ongoing stream of activities.

As top management develops a perspective, it begins to scan the focus areas which have the potential to yield the greatest good to the greater number of users at all times. Quality, document delivery, service and cost would be the user linkage parameters with respect to which the calculated satisfaction measures would provide a practical basis for prioritizing the improvement exercises.
(1) **Action Checklist:** The stage was next set to begin in-depth exercises for improvements. Equipped with the TQM thought processes, the top management chalked out an agenda and action plan for improvement. A checklist of items for consideration included the following:

(a) To clarify, appraise and redefine, as necessary, quality policies and goals.
(b) To establish specific objectives.
(c) To nominate a high-level TQM coordinator.
(d) To assign responsibilities.
(e) To guide and involve itself in the prioritizing exercises.
(f) To formulate and specify guidelines for the choice of short-term and long-term improvement projects.
(g) To provide the budget, manpower and other resources as required.
(h) To arrange for supplementary expertise as necessary, including deployment of professional specialists and consultants.
(i) To motivate the hierarchy towards participation.
(j) To arrange for imparting necessary education, training and problem-solving expertise to the improvement team.
(k) To correct distortions in executive policies and programme implementation.
(l) To take measure to enhance the consciousness and capability of the hierarchy and the work-force in carrying out the improvement mission.
(m) To audit and review the progress promptly.
(n) To support and arrange, wherever necessary, for effective implementation of the recommendations/suggestions from the improvement team.
(o) To conduct effective administration of the TQM policies, programmes and tasks for continuous performance improvement in the company.
(2) **Tooling**: TQM, though not a tool in itself, is an attribute of good management. When effectively practiced, TQM imparts durable competitive strength to management. Simple and useful tools and techniques form an essential part of TQM exercises. Knowledge gaps in the use of tools are a serious handicap.

Quite often, managements have difficulties in choosing the right tool kit for deployment in their particular situation. At the same time, it is unwise to have a rigid all-season kit. With experience, it is easy to choose some of the versatile tools suited to a variety of situations.

(3) **TQM and its Development**: A library’s continued success requires repeat service, which in turn depends upon the users. A strong user focus is therefore imperative. TQM is a means to this end, and an attribute of good management. TQM is essentially user driven. It takes a total systems view. It links the various library processes to provide a flexible response to users. TQM measures are not merely confined to traditional rejects, reworks. They also include global, parameters such as collection, effective service and marketing.

The approach touches every operation, every individual and every activity. Each is a link with the ultimate purpose: to provide durable satisfaction to the existing and potential users. Improvement is at the core of TQM mission. It is a continuous process. Its focus is on quality, document delivery and cost, as all these effect users.

The thrust of improvement is on the overall users requirements. What is good and ideal for one function or a part of the system may often impair the performance of the system as a whole. Improvement of library hours, purchase by quality collection, it maximizing use, high-technology equipments such as computer controlled and flexible service systems, are typically, ‘sub-optimal’. Specialist driven objective is, of course, necessary, but not sufficient for meeting the
libraries overall objective. The alignment of library processes with the goal of satisfaction is essential for the effective service.

TQM aims at improvements both in the library processes and the functional processes. The library processes have direct linkage with the goals. They flow horizontally. The functional processes are vertical as each function in the hierarchy operate on commands and authority structures. TQM links them to achieve much-needed effectiveness in library.

(4) Improvement Process: A process comprises activities that take an input, add value to them and result in output. In collection, the result is hardware; in administration, the result is software; decision making. Skills applied add value to input in both the cases. Some of the steps commonly employed in the TQM approach are as follows:

(a) Identify users requirements, and
(b) Aware them.
(c) Start with the key requirements. Follow up with a smaller number of requirements.
(d) Identify and list the processes including intra-and cross-functional activities that add up to the key requirements.
(e) Make a flowchart of the way you actually do service (not how you are supposed to do) to comply with the requirement.
(f) Using the flowchart as a basis, identify and evaluate the delays, bottlenecks.

1.2 Implication
1.2.1 Total Quality Management
Total quality management is both a philosophy and a set of guiding principles that represent the foundation of a continuously improving library. It encompasses mobilizing the entire organization to satisfy the demands of the users. TQM is focused on routine involvement and participation of everyone in the organization in the systematic improvement of quality. It involves each individual and group
within all parts of the organization. TQM provides a way of life to constantly improve the performance at every level and in every activity, by creating a positive continuous improvement environment based on teamwork, trust and respect, examining the process through which work gets done in a systematic, consistent, organization wide manner, applying quantitative methods and analytical techniques, and expanding your knowledge and expertise in process improvement. This allows a firm to capture a larger market share and provide more job security. TQM is a continuous learning process which never stops. It is a cyclic, and never-ending activity. It can be seen as a logical extension of the way quality has progressed. The use of standard quality systems such as ISO 9001-9003 norms make up the first steps on the way to total quality.

By continuously following the PDCA-cycle and accepting that this cycle never stops, improvement will become part of every person’s job. The library to learn to
understand itself better and is therefore better equipped to deal with the wishes of
the users.

<table>
<thead>
<tr>
<th>User focus and user involvement</th>
<th>Consistency of purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Employees regularly visit their users</td>
<td>• An inspiring mission and vision is developed and communicated to all organizational levels.</td>
</tr>
<tr>
<td>• Users are known and understood.</td>
<td>• SMART goals are formulated (Specific, Measurable, Achievable, Realistic, and Time specific).</td>
</tr>
<tr>
<td>• Users needs are integrated in the activities.</td>
<td>• Librarians are consistent in their behaviour regarding these goals.</td>
</tr>
<tr>
<td>• More is being done than the user expects.</td>
<td>• Guidance is given to the quality improvement process.</td>
</tr>
<tr>
<td>• Satisfied users are priority number one.</td>
<td>• There is commitment at top management.</td>
</tr>
<tr>
<td>• Changing users needs are systematically collected and lead to improvement.</td>
<td></td>
</tr>
<tr>
<td>• Preventing complaints instead of reacting to complaints.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Involvement of all library staff</th>
<th>Act according to facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Voluntary total involvement of everyone.</td>
<td>• Work according to facts and not based on rumors of feelings.</td>
</tr>
<tr>
<td>• Teamwork that leverage the knowledge and provides synergy, based on open-communication, respect and trust.</td>
<td>• The causes and consequences of problems are analyzed according to “measuring is knowing”.</td>
</tr>
<tr>
<td>• Skills are developed on the basis of “Learning by doing”.</td>
<td>• Goal oriental data is gathered and interpreted accordingly.</td>
</tr>
<tr>
<td>• Decision on the basis of consensus.</td>
<td>• Measurements are based on figure; verify everything with data.</td>
</tr>
<tr>
<td>• The present situation is open for discussion.</td>
<td>• Quality costs are analyzed.</td>
</tr>
<tr>
<td>• Investing in knowledge.</td>
<td></td>
</tr>
<tr>
<td>• Empowered employees.</td>
<td></td>
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<tr>
<td>• Entrepreneurial approach and</td>
<td></td>
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</tbody>
</table>
leadership skills at all business level.

<table>
<thead>
<tr>
<th>Process oriented</th>
<th>Focus on continuous improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>• On campus users are also satisfied.</td>
<td>• Employees improve themselves and their work and help others improve themselves and the organization.</td>
</tr>
<tr>
<td>• The process is more important than the results, address the means of work accomplishment an not only the outcomes.</td>
<td>• Problems are regarded as a means for improvement and a chance to improve process.</td>
</tr>
<tr>
<td>• The effectiveness of the process is measured.</td>
<td>• Emphasis on problem prevention instead of correction.</td>
</tr>
<tr>
<td>• The output is standardized.</td>
<td>• Improvements are based on a cross-functional, structured, and holistic approach, and are continuously documented.</td>
</tr>
<tr>
<td>• The process are documented in schemes and standard working procedures.</td>
<td>• Multidisciplinary improvement teams are established.</td>
</tr>
<tr>
<td>• Users are regarded as partners and long term relationship are established.</td>
<td>• There is a working climate in which continuous improvement is a way of life.</td>
</tr>
<tr>
<td>• The TQM culture is expanded to users.</td>
<td>• Improvement of the whole and not just the parts.</td>
</tr>
<tr>
<td>• Reduction of process variation occurs continuously.</td>
<td></td>
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</tbody>
</table>

“There is only one valid definition of a library purpose: to create a satisfied users. It is the user who determines what the libraries is.”

Dr. C.K. Sharma

Total quality management is a common method to improve the whole organization stepwise, structured and systematically according to hard work, discipline, intensive raining, and consistent implementation of techniques and resources. These quality principles form the foundation of TQM and are expressed in the four pillars:

1. Problem Solving Discipline;
(2) Interpersonal skills;
(3) Teamwork;
(4) Quality Improvement Process.

Fig 1.3: Four Pillars of TQM

"TQM covers all parts of the library....For an library to be truly effective, every single part of it, each department, each activity, each person and each level must work properly together, because every person and every activity affects and the turn is affected by others."

Dr. C.K. Sharma

1.2.1 The Problem Solving Discipline

The Problem Solving Discipline (PSD) encompasses a methodology for systematic, gradual, and team wise solving of problems. It involves the first pillar of the TQM. The PSD comprises of six steps for adequate and team wise solving of problems.

1. Understanding the problems
2. Analyzing the reasons
3. Generating solutions
4. Planning and implementing the solution
5. Measuring to determine if the solution really works
6. Standardization of the improvements

Fig 1.4 : Problem Solving Discipline

1.2.2 The PSD-Approach
First of all, it is necessary to put responsibility on a team and define the problem through teamwork. It is necessary to consult several information sources on the subject, such as results of users, surveys, complaints of users, information on process performance, and meeting with users.
1.2.3 Analyzing the root causes
This step aims at charting the many possible causes of the problem and selecting the most logical root cause from this. Make sure there is a systematic gathering of data at all key points in the process. Through brainstorming, take as many potential causes into consideration. A rule of thumb is to ask the question “Why” five times. Then select the most logical causes for further analyses.

1.2.4 Generating Solutions
This step aims at generating possible solutions to solve the root cause of the users problem, resulting in greater users satisfaction. Brainstorm using the data from the previous steps and generate an extensive list of possible solutions. Evaluate the solutions and then choose the one with the best chance of success and which is most suited to solve the problem.

1.2.5 Planning and Implementation
This step aims at carefully planning the proposed improvements, considering the consequences, and then implementing the solution. Therefore, it is important to communicate regarding the proposed solution, make all plans clear, design procedures, identify potential barriers to implementation, consider all necessary resources (material, equipment, facilities, staff), and identify training requirements.

1.2.6 Measuring
Measurements are completed to see whether the implemented solution has solved the problem or whether the problem has been reduced. A determination is also made to see whether the requirements of the users are met. In case of requirements of the users are still not being met, the possibility exists that the solution was incorrect, the problem was incorrectly defined and/or the wrong cause was treated. To measure the effectiveness of the implemented solution, several techniques and methods can be used.
1.2.7 **Standardization**

Standardization encompasses the clear establishment or documentation of process executions in standard procedures, and making sure that all employees involved in the process understand these and use them in a consistent manner. This will also prevent the organization from returning to old systems. One should take the following aspects into consideration:

- make sure that the procedures become part of the daily routine;
- make sure that all procedures are known and understood by everyone;
- give the information gathered during evaluation to those responsible for the process;
- each modification to the process has to be documented in changed procedures;
- communication as much as possible with employees regarding the measures taken and the results achieved;

1.2.8 **Important tools and techniques**

To execute the problem solving discipline successfully, it is necessary to apply certain quality improvement tools and techniques. A great number of appropriate tools and techniques are available for your continuous improvement effort. The most important among these are:

1. **Brainstorming**
2. **Affinity diagram**
3. **Benchmarking**
4. **Fishbone diagram**
5. **Check sheet**
6. **Flow Chart**
7. **Line graph**
8. **Run chart**
9. **Histogram**
10. **Pareto-diagram**
11. **Failure Mode and Effect Analysis**
12. **Scatter diagram**
13. **Control chart**
1.2.8.1 **Brainstorming**

Brainstorming encompasses the systematic and structured generation of possible ideas, on the basis of the creative thinking of a group of people. It is based on four game rules:

1. **Positive thinking:** The participants should try not to think of usefulness, importance, feasibility and relevance, and may certainly not common on these. This rule must not only lead to many but also to unexpected meetings. Strictly adhering to this rule is also essential to prevent team members from feeling attacked.

2. **Free Ideas:** The purpose is for team members to express each idea. Each idea that surfaces has to be shared without fear for criticism. Environment has to be created that gives team members a feeling of confidence and freedom.

3. **Understand others ideas:** The team members have to generate ideas by building on ideas of others. One should look for combinations and improvements of ideas.

4. **More and More Ideas:** In this case, quantity is more important than quality. The more ideas, the greater the chance of good solutions. The idea behind this is that quantity leads to quality.

This technique can be used in all phases of the problem solving discipline to obtain a good idea of problems, causes, results, and solutions. The goal of brainstorming is to generate as many ideas as it takes to solve the library problems.

1.2.8.2 **Affinity Diagram**

An affinity diagram is a tool to group a large amount of ideas generated by means of brainstorming. An affinity diagram is used on the one hand to group a large
amount of ideas based on existing relationships between these ideas, and on the other hand to stimulate creativity and teamwork during the brainstorming process.

Steps for drafting an affinity diagram:

(1) Problem formulation. Write down the problem in such a way, that it is known to everyone.

(2) The facilitator should allow everyone to formulate their ideas in random order.

(3) When all the ideas/notes have been placed on the board, all team members should come in front to group or categorize the notes around certain themes without discussion or comments.

Examples

To improve the motivation and labor productivity of the employees, the management of a library organized a brainstorming session using the affinity diagram.

(1) An improvement team was put together which formulated the following problem: “How can a work climate be created within the organization in which there is active participation of everyone, open communication.

(2) The team members generated some ideas, and placed in random order.

(3) Next, all participants were called to the front and they clustered the notes without discussion or comments.

(4) The previous step resulted in the following clusters of ideas: Judging, working conditions, communication.

1.2.8.3 Benchmarking

Benchmarking is the systematic and continuous process of determining what the best performances and underlying skills of leading organizations are in their strive for excellence, and based on this, stimulate the organization’s own strive for excellent performances at all organizational levels. It is a strategy to stimulate changes and optimize performances.

Benchmarking is mostly used to compare processes and performance against those of recognized leaders. Organizational processes usually used for
benchmarking are: marketing, acquiring, technology, development, product development and logistics.

Steps for executing the benchmark process:

1. Determine what should be benchmarked. During this stage, it is determined which functions, tasks, processes, or activities within the own library will be subjected to benchmarking. Based on the critical success factors one or more processes will be selected for benchmarking. Appoint a team that will map these processes in details: identify process stages and determine the process flow, the procedure for each process stage, relevant performance indicators.

2. Important criteria for the selection of benchmark employees are for instance: they should be outstanding regarding the benchmark subject competitiveness of activities, availability of reliable information about the employee. In addition, interviews with users, vendors, staff can be a valuable contribution.

3. Gather data. Data about the process performances are gathered based on interviews, surveys and consultation of contacts. The process and underlying working methods of section heads are examined thoroughly, performance indicators are measured and qualitative and quantitative data are gathered.

4. Analyze the data.

1.3.1 Role of the manager in developing quality library services

- As a manager, seeking to develop and maintain quality, it is important to recognize the changing role of the manager and the need to motivate and enthuse rather than tell. It is also vital to visibly support and promote quality at every opportunity.

- Recognize that staff are the vital component in the development a quality. According to Tom Peters, as a manager, you should be recruiting staff with ‘people skills’ as well as specific or professional expertis
Fig 1.5 European Model for quality

- As managers, you also need to think about changing the culture through involving staff at every stage. It is also important to motivate staff through providing praise, thanks and positive reinforcement wherever possible.
- Training is also crucial to the delivery of quality services. ‘Product’ or service knowledge is important as well as the more obvious people skills. Providing good induction training and updating staff on a regular basis will help them to be familiar with the full range of services.
- Customer satisfaction should be the key measure in all service decisions. It helps to encourage a customer focus if you circulate the results of surveys and customer feedback to staff on regular basis.
- Above all, as a manager, it is vital to lead by example! the quality focused manager has zero complacency and encourages feedback from peers, superiors and sub-ordinates to improve their own performance. Complacency is the real enemy of quality and every effort should be made to avoid it.

Finally, the development of quality library and information services is not on option, it is a necessity. If libraries are to survive in the future, we must demonstrate that our services and out staff are as excellent as they can be. The quality approach can help us to do that.

In the new millennium a librarian has to focus on the right priorities. They should lead with clear vision to fulfill its objectives, unleashing power of all employees
in turn to meet competitive challenges in brief libraries need working condition of Total Quality Management.

Application of total quality management in library services are different sets of skills, is required of the staff. Training is a key component. Of course there are many other factors or issues that need to be addressed on the road for a successful implementation of total quality management. These include:

- Identification of users
- Standardization and work process
- Quality measurement procedure
- Improvement internal organization management
- Improvement of HRM.

1.3.2 Quality Circles

The concept of Quality Circles is central to QM which ensures staff participation in full measure towards achieving the targeted goals of the organization.

A Quality Circle is a small group of between three and twelve people who do the same, or similar work voluntarily, meeting regularly for about one hour per week, in paid time, usually under the leadership of their own supervisor, to identify, analyse, and solve some of the problems in their work, presenting recommendations to management and where possible, implementing the solutions themselves.

The significant expressions in the above definition are:
- A small group of people who do similar work;
- Between three to twelve people;
- Voluntarily meeting together;
- Meeting regularly for about an hour per week;
- Meeting in paid time;
- Under the leadership of their own supervisor;
- Identify, analyse and solve problems in their work;
- Presenting solutions to management;

1.3.3 Customer need and Service

The philosophy of Total Quality Management is based on understanding customer needs and improving customer service and satisfaction. There are many elements of TQM addressed to different areas for change. Some of the main elements are depicted in figure and discussed below:

![Diagram of Main elements of TQM]

Fig 1.6 Main elements of TQM

1. **Quality is customer defined**: Quality of service or service excellence is a desire to maintain or strengthen the commitment to the library’s philosophy of service to users. Quality is defined as the gap between a customer’s expectations and perceptions. Such as 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 quality service.
(2) **Internal and external customers**: The library shall be functioning as a “learning and resource centre” in its efforts to stay abreast of changes in its internal and external environment and to increase the training and skills building programmers for revitalization and renewal. The library should have direct contact with internal and external customers and to encourage each employee to identify those to whom the provides a service and to view such people as the library’s internal customers. In this way the customer orientation can spread into the organization.

(3) **Employee Involvement**: Employee involvement and team building helps in fostering collaboration, trust, open, honest communication and more structured and consistent approach to team work and problem solving. Employee involvement means that each individual must take the initiative and not rely upon some one else. Everyone must understand the contributes equally and can only succeed through co-operation and support.

(4) **Error Free Process**: The objective of TQM is to prevent waste, reduce costs and achieve more effective, efficient and error free processes. The processes should provide a way to gain more knowledge to whole processes and to keep them open to critical analysis and evaluation.

(5) **Performance measurement**: Performance measurement needs to be based upon timely measures of, and feed back on, performance. It provides information on today’s service and gives an indication of the level of improvement compared with the previous feedback.

(6) **Continuous Improvement**: The library should set goals for continuous improvement to develop this a focus on training, education, communication, recognition of achievements and team work are very essential. Management should fulfill its responsibilities to motivate and train all employees at all levels to improve all areas of operation. Statistical surveys and techniques may be applied if necessary to collect data about customers, employees, technology and equipment that are required. Charts and diagrams should be used to identify problems, map workflow, show progress and point to solutions. Graphical techniques can
show an organization how its processes work, what its baselines are, where the variations lie, the relative importance of problems to be solved, and whether change made have a had the desired impact. Continuous rests on the simple premise that a structured problem solving process produces better results than an unstructured one: instead of just trying to “do better” in an undefined, intuitive way, the problem solving person should be based on quantitative performance indicators and monitor progress towards these goals.

1.4 Objectives of the Study
The specific objectives of the study are to:
1. Understand the concepts of Quality; Quality Control; Quality Assurance; Total Quality Management;
2. Review the Quality Assurance System of University education;
3. Examine the application of TQM with particular reference to University Libraries.
4. Study about the criterion for Quality assurance in providing Quality Information Service into DU, JNU, JMI.
5. Practical role of information management i.e. acquisition, organization and dissemination of knowledge.
6. Cultural role of preserving human knowledge and
7. Social in intellectual role in bringing people and ideas together.

Few problems have their bearing on every aspect of library profession. It is in this context that the application of total quality management (TQM) to university libraries is timely. Therefore the problem under investigation is to study and analyse the existing level of TQM in university libraries of Delhi University, Jawaharlal Nehru University and Jamia Millia Islamia, Delhi.
1.5 **Hypotheses**

From an operative perspective, a dynamic environment is shown through changes in user taste, service technologies and in the ways for competition in the library. If the environment is dynamic, firms will need to adapt faster to users needs. In turbulent environment the success of firms depends more on their adaptation to change and users depends more on their adaptation to change and users needs.

Furthermore, the more the dynamism in an environment increases, the greater continuous improvement will be. Incremental improvements as against radical ones will allow this greater flexibility.

The employees, through work groups, may achieve greater flexibility in order to adapt to the environment, given that those who are most familiar with the work are those who have the authority and responsibility, not simply for perceiving but rather for implementing changes. This really amounts to admitting that if TQM does not involve a true empowerment, the mechanistic efficiency of TQM may create stability in the work system at the cost of being unable to respond to environmental fluctuation.

1. Environmental dynamism has a positive effect on user focus improvement of library service and teamwork.
2. Teamwork achieved greater flexibility.
3. TQM create stability in work system

1.6 **Scope of the Study**

In context of libraries comprised of a number of complex function, TQM can be described as a strategic process of seamlessly integrating all functions, activities of an library for continuous improvement of the quality of collection and services. The aim of this strategic process is user satisfaction and the outcome is excellence in performance. Strategically, TQM system drives the library processes for...
superior results by changing the focus of all activities in the library to the users. In university libraries of Delhi (DU, JNU, JMI) to change the focus of all activities to users and users needs, TQM system presumes that:

(1) Entire library process is an unending “chain” for delivery of continuously improved collection and services to the total satisfaction of the users and

(2) Individual or group who are performing an activity or activities concerning those collection or services is “links” in that chain.

More specifically, this means that each link in the chain that delivery collection is or services ‘receives and provides’ some service or subset of the resources from he preceding or succeeding links. TQM strategy tries to build user orientation in such a way that everybody in the library feels involved and committed to the process of users satisfaction.

This study is limited to university libraries:

(1) Delhi University Library System

(2) JNU

(3) JMI
References


5. Deming, op. cit.

6. Crosby, op. cit.


