INTRODUCTION

CHAPTER - I

1.1 Introduction

Rising competition within service sectors have created a scenario to adopt Quality Management (QM) initiatives to overcome consumers’ expectations. Presently, our country is proving to be educational hub and attracting students from across the globe. Our country has a broad and wealthy network of educational institutes. The government policies have also been highly positive with an aim to develop a qualified workforce on a large scale. But, on the other side, it is very important to manage this huge quantity of educational institute as there is a growing concern about the quality of education in these institutes. The most important pillar of good education are books and that’s too the quality books. The store that addresses the books in any educational institute is ‘library’.

“The key principle of a library is to provide an assistance to teaching, literature for past research activities and recent information to their users” (Aftab & Khan, 2014). In today’s fast changing scenario, to sustain in this environment and to keep their users comfortable, it is required to adopt QM approaches in libraries. In an academic library the customers receive the services nonstop from the service source. Libraries are the most recent to take up Quality Management (QM) practices. For an extended era, librarians considered themselves as caretaker of information, but from the beginning of recent times, the main role of a library is to act lively representative in transmitting knowledge.

“Many QM techniques are present for quality improvement purpose but Total Quality Management (TQM) has its successful genesis in industrial surroundings and is frequently cited for it being appropriate in service-oriented organizations also” (Begum & Nisha, 2003). Although, in the beginning, “TQM is assumed to be only meant for manufacturing industries producing products, but the similar key critical factors of TQM like management involvement, staff training, leadership, motivational initiatives, safety, satisfaction have persist the librarians to implement the concept of TQM in libraries”. To survive in this global era, today’s librarians have to provide high quality services to their users for satisfying their needs and requirements. For successful implementation of TQM in libraries, it is highly required that library professionals should make a cultural shift in their attitude for better understanding of the users. The basic principle of effective implementation of TQM in libraries is-
• Total : Involvement of all
• Quality : Conformance to necessity
• Management: Effective control of processes

In the industries where the product is manufactured, the user involvement is limited while manufacturing but in service sector like library the user’s expectations are directly in the hands of staff providing services. In the past factors like extra money, large collection of books and allocating huge space are considered to make a first-class library but nowadays the scenario has changed. Now the principals of QM such as cubic space, overall integration and flexibility are ways of life in libraries. “For providing the right information to right user at right time, a librarian should have to follow the theories of QM and QM attributes always insist the libraries in improving their services in providing the directions to move towards quality service”. With this in mind, the present work has been attempted to evaluate accepts of QM in the libraries of engineering college’s of Haryana. This work is an effort to validate the exceedingly valuable role of QM practices for engineering college’s libraries and to explore accepts of TQM in library services. After an extensive literature review and intense discussions with academicians, a list of TQM factors has formalized and then these factors have been categorized into groups and sub-groups, depending upon their impact. A survey has been conducted over the engineering college libraries situated in Haryana and findings have been analyzed. For validation and testing, MINITAB software has been used for statistical analysis in the present work. Present work is an innovative attempt to test and explore the TQM issues in engineering college libraries in the state in Haryana and to measure the performance of an institute library at management level, financial level, infrastructure level, collection level and service level.

1.2 Evolution of Quality Management Initiatives

Insight of QM was developed in Japan start in the late 1940's and 1950's, initiate there by Americans Feigenbum, Juran and Deming thereby lay down the ground works of TQM in manufacturing sector (Harvey & Green, 1993). QM is a move towards in integrating the existing resources into a solitary unit to get the needed target (Reeves & Bednar, 1994). TQM key centre of attention is to keep quality values as per need of the consumers (Ashcroft & Foreman, 1996). The growth of TQM take placed in stages recognized as shown in Table 1.1(Choppin, 1995).
### Table 1.1 - Evolution of Quality Management Initiatives

<table>
<thead>
<tr>
<th>Phases</th>
<th>Year</th>
<th>Characteristics</th>
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<tr>
<td>Inspection</td>
<td>1910</td>
<td>Sorting, Remedial Actions, Identifying cause of defects</td>
</tr>
<tr>
<td>Quality Control</td>
<td>1924</td>
<td>Recoding data, Rework, Manuals, Planning, Introduction to statistics tools</td>
</tr>
<tr>
<td>Quality Assurance</td>
<td>1950</td>
<td>Quality process planning, Making quality manuals, Quality audits, Cost control</td>
</tr>
<tr>
<td>TQM</td>
<td>1980</td>
<td>Customer focus, Continues improvement, Leadership, Overall Integration, Management concept, Flexibility, Optimum utilization of available resources.</td>
</tr>
</tbody>
</table>

1.2.1 Inspection

Inspection can be called as the first step move towards quality management (Cronin & Taylor, 1992). In the early 1900s Fredrick W. presents this idea to operate their work in an effective manner (Hauser & Clausing, 1988). The inspection process is a going over process used to check nonconforming in final products being and sent back to be modify or answer in inferior rated products that are produced in an evaluation structure (Tague, 2005). It is the act of looking at somewhat carefully or a visit to an organization to check that everything is correct and legal in relation with the user requirement (Brown, 2000). Inspection is the most common method to control quality and check whether standards values are being followed or not (Logothetis, 1992). The role of inspection is to confirm and certified the variance data (Richardson, 1998). This method was capable to make sure a definite level of quality for a product or service. In product industries, producing finished goods, inspected to ensure whether the product met the specified tolerance limits or not where as services inspected by checking the delivery time (Hill, 1995).
1.2.2 Quality Control
Quality control actions guide to superior method control and less frequency of non-conformances (Crosby, 1979). Before the 1940s, Japanese limited to inspection only and after that the concept of quality control comes into picture. J.M Juran first book on quality control (Quality Control Handbook) published in 1951 (Evans & Lindsay, 2001). Quality control aim to detect faults and reworked on them to optimize the method. Quality control is the aged quality idea. It refers to the detection of defects in produced parts. As a method to control quality, it may involve a considerable amount of misuse, fragment and change (Khanna, 2001). In the age to start quality control, the system to use paperwork just starts for maintaining the procedures, data records, testing reports and feedback collection. In services, to control the quality standard, it is important to make data collection related with time to deliver, voice of customer, requirement of users and facilities to in-house persons (Harvey & Green, 1993).

1.2.3 Quality Assurance
It is the third stage of quality management development starts nearly in 1950s which lead to attain excellence by integrated the system hard work. Quality assurance is different from quality control as it involved into the process to make sure that the product is produced to a predetermined requirement (Benson, Saraph, & Schroeder, 1989). It is about to ensure to produce zero defect products and to get right things every time (Gryna, Chua, & DeFeo, 2014). Quality assurance is the type of system developed to make a sense that how the production process will take place to maintain the standards (Wilson, 2015). It can also be called as a workforce or a team working in a closed loop system to overcome goals.

1.2.4 TQM
TQM is the fourth and the last step of quality initiative till date as shown in figure 1.1 (a) and 1.1 (b). The term of TQM was firstly used by the defence authorities in the United States (Evans & Lindsay, 2001). At that time TQM considered as the new term given to Total Quality Control (TQC) and it is considered that quality is not to control but it is to manage (Kanji & Barker, 1990). Firstly Japanese started their special work towards quality in 1962 and invented a concept of quality circle. USA also makes progress towards quality management but with less force than the Japanese. In the early 1980s American realized that they are lagging behind as compare to the Japanese in producing the quality products. At that time American take this as a crucial factor for their
organizations accomplishment and take it as a management strategic in product as well as in service sector to satisfy the needs of the customers. Today, it is well known structured approach used by most leading organizations to develop their quality improvement programmes.

Figure 1.1 (a) - Evolution of TQM

Figure 1.1 (b) - Evolution of TQM
1.3 Significance of Library

Library, in any institution, can be termed as the ‘heart of the institute’. This is so because every person associated in the institute has to go through library whether they are students or the teachers. We all know students go to the library to acquire knowledge. The knowledge can be related to the subjects he/she is studying or about various other topics related to his interest. The teachers have to refer various books to concur the new inventions and concepts that have come up as a result of continual improvement nature of humans. Therefore it can easily be said that the overall health of an institute is directly proportional to the heart of the library as in the case of human body. If the health of the heart is good, the body functions well and vice versa.

Health of the library depends upon two major factors. One being the contents it acquires and second is the operating system of the library. Both of these factors are supplementary to each other. The library cannot function well in the absence of even one of these two factors. An insight into these factors is described in the coming paragraphs.

Contents in a library directly refer to the quantity and quality of the study material it acquires. Theoretically, a healthy library should contain enough material that can fulfil the reading aspire of every person in the institute. But we all know that this is impossible, so practically, the library should contain the books related to the course being taught in the institute in enough quantity and of the high quality. Here, quality of the books is also important because as the person reads so is his/her knowledge about that topic. Apart from books the library should contain some journals, magazines of national and international repute to help the students indulge in research activities. Researchers, around the world, publish and share their latest research through journals. So a library with subscription of good journals can help the researchers to move in the right direction and to find about the latest occurring in their related area of research. Journals can be of two types: Print and e-journals. Apart from books and journals: various magazines, current affairs note sheets, religious books, encyclopaedia, novels, newspapers etc., in fact there are unlimited resources that a library can have. These all can be termed as the primary resources of library.

Operating system of the library is the term given to those resources which are secondary in nature but are equally important for effective operation of the library as a system. One of them is the infrastructure. The infrastructure plays a pivotal role in effective operation of library. Infrastructure consist of furniture required for keeping the books and other
material in a proper and manageable way, a proper sitting and reading area, computers with a proper and advanced software for efficient working of library to manage and record of the resources for library staff etc. Other than these there are various other things that can be very helpful for effective and efficient working of library. Beside the physical entities, library must contain highly educated and motivated staff which can run the library in a proficient manner. 

Now to make the above said factors well established and run efficiently in an institute, it is required to launch the thought of QM within the institute library. Beginning of QM move towards in the libraries can draw them towards the customer as well as library staff delight and commence to an innovative lay down of possibilities by opening the doors that have never existed. Commencement of QM aspects will definitely move the library to act in a dexterous way. The students of that institute can take full advantage of a well-equipped library to acquire knowledge and can excel in their studies. Teachers also can learn newer technologies and add them into their teaching methods and contents. If the teacher and students of any institute are doing good in their respective area, which, obviously are inter-related, then an institute is said to have a good reputation and can be termed as having a good health. Hence it can easily be stated that ‘health of an institute is directly proportional to the health of the library’.

1.4 Concept of Quality Management in Libraries

Diverse wishes and circumstances encourage a librarian to practise idea of QM into their system. Several illustrations of aids that uphold the renovation of a library to take up QM include the desire to:

- Go over the user prerequisite
- Pick up the library reflection
- Pick up workforce confidence
- Generate the familiar mission
- Get better communiqué
- Regulate and control progression
- Bridge responsibility spaces

QM is an integrated advance of regular enhancement involving executive headship and targeted on the necessity as well as voice of the users (Ho, Cicmil, & Fung, 1995). Quality Management is determined by two lane proposals about how to sprint libraries efficiently – Most important is client fulfilment and second is helpfulness in providing
facility (Ward, 2000). If the libraries come across out the user’s requirement and like, it turn out to be easier in accomplishing the services precisely, well-timed and getting success (Fitch, Thomason, & Wells, 1993).

QM significance is the course of action of making an error free examining route for libraries. Reliability is the most applicable facet in providing service quality in library (Berger & Hines, 1994). Libraries can benefit by commencing the idea of QM in subsequent manners-

- Creating well-built family relation between internal (staff) and external consumers (users) (Spang, 1996)
- Aspiration towards permanent perfection (Marshall, Morgan, Thompson, & Wells, 2014)
- Exploiting work in effectual, professionally, inexpensively and carefully (Aftab & Khan, 2014)

Service benchmarks in libraries are more challenging because users are becoming progressively more sensitive to quality service. The concept of quality within the library information system has firstly arrived from the parent association to which it grants services (Li, 2006). But now a day, the concept of quality has become a critical and necessary feature of library information system (Herget & Hierl, 2007). It is required to set the appropriate and reliable standard measures for the effective quality services implementation provision in the libraries. Service quality in the library is estimating in opposition to satisfaction of the users. Libraries, like others non-profit service organization have a tendency to characterize quality in terms of luxury of available assets. Collection and depth of services, availability of library professionals, availability of books and number of volumes considered as the measures of library quality signs (Ladhari & Morales, 2008). Quality services are unswervingly correlated to value and in libraries; the value is in terms of library performance towards their users.

Under uninterrupted enhancement, “Quality considered to meets user’s expectations” (Adam, Corbett, & Ho Rho, 1994). Firstly, it is required to know the expectations of the user and how these expectations evaluated (Bohoris, 1995). Quality of library services can easily improve by taking following considerations-

- Qualified skilled staff
- Proper guidance to users
- Reducing waiting and idle time of users
• Provision of E-services
• Planned layout of library
• Available of material as per user’s expectation
• Library internal environment

To provide quality services in libraries, following points should be considered:
• Measure the voice of customers and draw a model to fulfil them (Ball & Lewis, 2016)
• Perfect release of services (Ellis, 2012)
• Suitable conveniences like parking, canteen etc (Begum, 2003).
• First-class housing-sitting room, illumination, toilets etc (Sennyey, Ross, & Mills, 2009).
• High-quality operational stipulations-computers, videos, internet (Weiner, 2005)
• Helpful control- effectual enquiry answering (Pors, Dixon, & Robson, 2004)
• Accommodating staff (Martensen & Grønholdt, 2003)
• Practice of opinion system (Byrd, 1998)
• Valuable observing and directing (Nitecki, 1996)

Hernon & Calvert (1996) explained that the three areas of libraries which should be concentrated in providing quality services
  a) Assets: In sequence for optimum utilisation
  b) Association: Service healthy atmosphere and supply good delivery
  c) Staff: Availability, helpfulness, politeness and answering the queries

There are also some barriers that bring to standstills the library to follow QM practises into their systems include:
• Lack of ability to alter the frame of mind of top administration
• Incapability to revolutionize the culture
• Lack of guidance and edification
• Lack of effectual communication

1.5 Quality-Related Terminology in Library

In the context of libraries, quality of library services evaluates by knowing about ‘Customer or User Satisfaction Level’.

Quality: The meaning of Quality in the perspective of library is as follows:
• Q – Quest for upgrading individual responsiveness.
• U – User’s demand
• L – Librarian leadership
• I – Integrating management, professional and supporting staff
• T – Team work (Total Employee Involvement)
• Y – Yardstick to measure performance

• **Quality Control:** Quality control can be used to describe internal practices for quality maintenance and enhancement in libraries (Vergueiro, 1996). It is the central component of QM. Quality control is the route to assess the authentic performance (Adams, 1993). It involves checking the results with relevant standards. Quality control is about controlling the activities in order to get desired goals (Jackson, 1998). In libraries, however, it indicates a prepared process, monitoring and controlling of libraries activities in order to ensure best possible operation of existing resources (Miller & Stearns, 1994).

• **Quality Assessment:** It is the evaluation of the quality of service provided in a specific subject. It is often used in an extended sense for the evaluation of libraries or a part of it and for overall purposes using both internal and external procedures. The aim of quality assessment is to assess the social relevance of the service provide to the users of the library (Cundari & Stutz, 1995). Principally, it is used essentially to denote the valuation of a library.

• **Quality Audit:** It is concerned with the processes and procedures. It is the systematic and independent examination to determine whether quality activities and related results comply with planned arrangements or whether these arrangements are implemented effectively and are suitable to achieve objectives. Quality audit is not concerned with the appropriateness of the objectives or with the results obtained (Smith, 2004). With reference to libraries, “Audit - an externally driven peer review of internal quality assurance, assessment and improvement system” (Tejeda-Lorente, Porcel, Peis, Sanz, & Herrera-Viedma, 2014). It focuses on the process that is believed to produce quality and techniques by which academics promise come in position to attain quality benchmarks. It does not decide whether library or a program meets threshold quality criteria and therefore, certifies to the public the existence of minimum rating standards of libraries.

• **Quality Dimensions Utilized by Users to Assess Library Services**
  o **Performance** – Performance evaluation of libraries is to identify key areas within library which need urgent attention (Einasto, 2014).
  o **Reliability** – Reliable information which makes users free from disbelief and misunderstanding?
o **Access** – Accessibility, availability and approachability of library building and reference resources documents (Babalhavaeji, Isfandyari, Aqili, & Shakooi, 2009).

o **Features** – Library features that attracts the users.

o **Courtesy** – Goodwill and politeness of library staff.

o **Availability** – Proper opening hours and unrestricted access.

o **Customer Service** – Providing facilities as guaranteed with well-timed document distribute.

### 1.6 TQM Principles in Library Services

With the success rate of TQM implementation as an executive attitude in product and process segment; this approach is also ever more adopted by service sector including libraries (Düren, 2012). There are many approaches that can be used in libraries to achieve quality service but all these approached lie down under the roof of TQM principles. TQM application in library services is a framework of various TQM elements which influence the library services (Dash, 2008). From these TQM elements, the management’s scientists have derived various principles of TQM in library services as follows:

**Principle of Quality Integration**

TQM approach is not only to fulfil the requirements of customers but it is the assimilation of the entire interdependent services to complete the target of the library system (Begum & Nisha, 2003). TQM in the library system means the overall integration of quality of work, quality of system, quality of services, quality of man power, quality of available resources, quality of collection, quality of assets within the library (Butterwick, 1993).

**Principle of Continuous Improvement**

In today’s dynamic environment, libraries are designed to fulfil the needs of the users, which are ever growing at very fast rate. Factors of growing user’s expectation, continuous advancement in information technology and competition force the librarians to take up nonstop improvement planning as a standard way of managing the libraries (Chao, 2002). Continuous improvement in library service is to find out the link between the service quality and users satisfaction (Chen & Chou, 2011).

**Principle of Performance Measurement**

Library as a system, require measuring the performance at management level, financial level, infrastructure level, collection level and service level (Sahu, 2007). Performance
evaluation of libraries is necessary as it will help the library managers to identify key areas within library which need urgent attention (Anderson & Zwelling, 1996). So, it is always required to measure the performance of the system timely with advanced quality feedback information system on performance.

**Principle of Customer Satisfaction**
For success in this competitive era, customer’s satisfaction considers as the first top most priority for every organization providing the services. In every quality management activity, customer is the only basic value that guides the business actions. For making a design in providing quality services and also in decision making processes in a library system, user’s voice and needs considers as the input resource (Coleman, Xiao, Bair, & Chollett, 1997). Libraries in providing the service to society have the outside users, clientele as well as the library staff considers as the inside users (Johnson, 1999). With in this environment, it is strongly required to satisfying the outside and inside customers within an organization.

**Principle of Overall Integration**
TQM principle of overall integration within the library means integration of service centre available physical resources and facilities in a unit with full mutual cooperation to get optimum results in providing quality services (Mahawar & Shilpa, 2007). The available resources include every item including in providing the services like management, professional and supporting staff, supporting activities, customers, infrastructure etc.

**Principle of Cubic Space Utilization**
TQM in library direct towards the optimum utilization of available space in all the possible directions – vertically, horizontally as well as floor area. Library layout should be such that the total space available should be used properly. Library layout includes the position of racks, sitting arrangements, storage arrangements, staff and user’s movement areas etc (Khurshid, 1997).

**Principle of Safety**
Realization of safety to user’s and staff is one the major factor in providing the quality services in a service organization. A service organization cannot provide good service if it subjects staff and users to hazards, pollution and accidents (Martensen & Grønholdt, 2003).
Principle of Flexibility
TQM principle of flexibility directs the library to adjust and rearranged the library system at minimum cost and inconvenience (Viljoen & Underwood, 1997). This objective become more important day by day because of the increase rate of scientific research areas, information system, communications and awareness among the user’s & it calls upon library service to keep pace. This means frequently changes in every aspects of library system as per requirement and needs of the customers.

Principle of Minimum and Smooth Movement
Objective of this principle is to provide the smooth and minimum movement of user’s and staff within the library. The arrangement of library should be such that the space for movement should not of zig-zag type. Zig-Zag type of movement within the library provides inconvenience and unsafe for both inside as well as outside customers.

Principle of Top Management Commitment and Dedication
Effective management dedication and leadership is the base for TQM application. Every attempt to apply TQM will fail if top management is not committed and delegated. Management personal involvement and leadership is the basic requirement in defining, measuring, analysing as well as achieving the targeted goals. Top management involvement establishes a vision and purpose in generating the quality services in the library (Patil & Pradhan, 2014).

Principle of Culture Change
TQM implementation provides an atmosphere of culture change. Culture change at service station insists the employees and supporting staff to become responsible for customer satisfaction (Quinn, 1997). TQM provides the way of cooperation among attitude of user’s and staff to improve the quality standard of service.

Principle of Ongoing Education and Training of Employees
The knowledge and communication skills of the library staff participates a significant and important role in the effectively running of TQM in the library services. In-service training and improvement programs of the library staff are very essential for the continuous improvement in the library services (Singh, 2013). Effective training always equips and motivates a person to develop his/her needed skills. By providing proper education and training, quality services set in motion and customer delight and happiness is constantly achieved.
Principle of Prevention Rather than Inspection
Inspection at the end of the ongoing process is the traditional way of an organization. But it seems to be costly, ineffective. TQM approach directed to “Do the work right in the first instant” rather than to reply after the difficulty occur (Starr, 2003). Problem prevention can be done by monitoring all the processes, define the voice of the customer, identify the causes of the problem, improving the services and controlling the process so that the problem do not reoccurs.

Principle of Statistical Way of Thinking
TQM directed to solve the problem by statically way of thinking (Wrigley, 1994). Solving the problem statically is a structured and discipline approach. Now a day’s various software’s are available for analysing the problems statically and timely shows the result & also easy to operate.

Principle of Total Employee Involvement
Traditionally management always ignores the employee’s involvement in the management activities. TQM always shows the way to motivate the employees to make their contribution in making decision for providing quality services (Sivankalai, 2012).

1.7 Road Plan to Enterprise TQM in Library Services
Following the success of TQM, libraries have got attention in TQM since 1990s (Wang, 2006). Roadmap to enterprise TQM in library services provides the way to define the sustainable changes that must be occurs to get suitable results (Figure 1.2). The road plan starts from the decide phase. This begins when someone library professional think that something must be change otherwise in this global era, the libraries will not convene the beliefs of their clients (Weiner, 2005). It is the time when the libraries needs to generate new information or better information because the more new information a library has, the better their planning for change. For this there are number of areas that should be considered.

Decide to Deployment Phase
- “Starting from Favour the Customer, it is required to make a customer faithfulness judgment to find what the customer like and dislike about your services” (Nitecki, 1996).
- “Identify the areas of strength and weak areas by performance analysis for culture change”
- “Understand the staff attitudes towards the proposed changes”
• “Understand the key service areas and how the change will affect them”
• “Identify the desired scope of change”
• “Assess your library status to set strategies and goals” (Jason, 2012)
• “Integrate and align quality requirement into service plan”
• “Learn about the transformational approaches”
• “Conducting the quality review in all sections to understand the level of improvement needed”

Prepare Pilot Phase
This phase starts by using the map generated in first phase and it ends after the successful commence of pilot project. In this phase the administrative team starts to practise for the changes that will take place. It deliberates on build up a pilot attempt to try the change in a small section before carrying it out in the total library. This phase builds on the review and sets up the organization for success. From this, the libraries commence to identify the plans that must be carried out to meet the needed objectives founded in the first phase. This phase also includes the following section to start:

• “To set up the initiative goals and make sure that they are making paralleled with the management goals”.
• “Deal with the finance concerns”
• “Build up and start carrying out of communication plan for both internal as well as external”
• “Identifying the pilot project to start and make plan for training about this project”
• “Establish infrastructure in terms to make steering committees and identifying the initiative leaders”

Start on Phase
In this phase the steering committee start up the pilot project in library, review the pilot project progress and make the decision in its favour. This section includes:

• “Conduct pilot training and monitoring the committee training” (Khurshid, 1996)
• “Support and monitoring the project”
• “Measuring and evaluate the progress of the project”
After carrying out the pilot project, the steering committee members assess what has to work and what has not. This will help to decide whether to dump the efforts or to change the plan to execute.

**Develop Phase**

Now it is the time to expand or develop the size as well as vision of the management or organization. It will take long time because it is time for cultural change. Library must continue to implement its plan within this phase to get the desired changes. This phase includes:

- “Modify original operation maps based on lessons learned and present ideas”
- “Expend the committees involved and prove additional training”
- “Establish objectives for the staff members”
- “Measure review and monitoring the ongoing project within the library”

**Continue Phase**

The final phase is the continue phase when libraries have an integrated available resources. Key service areas are defined and the process committees are assigned to improve the services. Staff performance re-evaluates and recompense is in line with the changes required. The steering committees regularly re-examine and inspect the changes processes. This will result in a discussion or yet change in the strategy of the library providing services. This phase includes:

- “Continue to measure culture change and acts on scope of improvement”
- “Focused on the customers demand and needs” (Landrum & Prybutok, 2004).
- “All staff member within the library must be trained to know what is expected from them, how they have to do their work to meet the desired expectation”
- “Conducting the audits and take actions as required”

![Figure 1.2 - Road Plan to Enterprise TQM in Library Services](#)
1.8 Correlation Linking within Library and TQM

A quality matter within the industries primarily recount upon many factors like raw material, employ skills, tools and equipment’s and the working environment. Correspondingly, quality within the library services depends upon the various factors as listed below (Jeannette & Crowley, 2003) (Goodall & Pattern, 2011):

- Management visualization for enhancement in the direction of library
- Decentralization and partaking of library staff
- Economic reserves for guidance and up gradation
- Ample budget for retaining collection of manuscripts, journals, magazines and non-recurring financial plan
- Appropriateness and appeal of the library office block for use
- Collection and passion of services
- Openness of online computer information in the interior of the library
- Accessibility of experience and educated staff
- In house service training and advance instruction workshops
- Given that facility as undertaking with well-timed manuscript deliver
- Suitable availability/opening hours as requisite for the user’s

It is clear from the above that the concept of TQM in the industries fulfils the goal of customer’s satisfaction, in the same way the services in the libraries should adopt it to make their user’s satisfied (Harith, 2013). Valuable and realistic execution of TQM in service sector like library require fully loyal, encouraged workforce in gratifying the user’s requests as well as unspoken patience and devotion on the part of administration. User gratification is the at most goal in the libraries functioning. In the present day’s with the amplify in competitions, higher levels of user’s expectation, information revolution and customers focused environment, libraries have no exception rather than to implement principles of TQM. The library users assume that they will get adequate quality of services. The importance of service quality in the public mind has resulted in quality service becoming a key priority for the most of libraries (Moghaddam & Moballeghi, 2008). With the relevance of hi-tech resources in libraries and awareness along with alertness in the user’s attitude; it turns out to be effectively obligatory to make an transparent and smooth flow of information (Raina, 1995). By implementing TQM in libraries, it is required to take considering following aspects:
• All library activities should start from the concept of quality services (Cook & Thompson, 2000)
• Achieving quality is the integrated role of staff as well as users (Cook & Heath, 2001)
• TQM relevance is a extensive term plan so have patience (Raja & Mahalakshmi, 2016)

Talukder & Ghosh, (2004) present a correlation linking within TQM and library services in diverse aspects shortened in Table 1.2.

<table>
<thead>
<tr>
<th>Aspect</th>
<th>TQM</th>
<th>Library Services</th>
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<tbody>
<tr>
<td>Characterization</td>
<td>Customer focused</td>
<td>User focused</td>
</tr>
<tr>
<td>Time Period</td>
<td>Long Term</td>
<td>Long Term</td>
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<tr>
<td>Liability</td>
<td>Organization, Management, Employs</td>
<td>Human Resources in Library</td>
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<tr>
<td>Main Concern</td>
<td>Effectiveness, Economic aspects and efficiency</td>
<td>Service Quality and Users Easiness</td>
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<tr>
<td>Problem Solution</td>
<td>Managing Teams</td>
<td>Library Professionals’ teams</td>
</tr>
</tbody>
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1.9 TQM Initiative in Libraries: Why and How?
If you want to find out about your quality, go out and ask your customers (internal as well as external) (Hackman & Wageman, 1995). The principal setback of numerous quality plans is that they are quality progress Islands excluding connecting flyovers. TQM creates a culture that makes everyone responsible to give their best (Powell, College, & Island, 1995). TQM integrate all its efforts to be remaining in the competition consistently. Library is certainly one of the largely critical and important parts of an educational institute. Libraries grant the necessary resources to its user's to meet their
scholastic requirements which ultimately help them in achieving their desired goals (Wilson, 1998). Libraries should have the spirit of empathy atmosphere (caring, helpful, exceptional characterized attention provides to its users) and take care of their customers as special one. Library deal is the arrangement of services-practice and its release. In general, libraries primarily focus on library management, structuring the books collection and helping the users to access them easily (Cowgill, Beam, & Wess, 2001). Therefore, the tasks of a library can be commonly regarded as administrative control, routine services and client services (Hsieh, Chang, & Lu, 2000). To provide optimum facilities to its users and filling their learning requisites have inspired libraries to set up the concept of quality management into library checks (Cook & Heath, 2001). If a library needs to improve their quality services, it is very essential to create a quality culture within it system (Dongare, 2012). For a library, it is required to satisfying its user's, library staff and funding bodies. So it becomes very much essential to introduce important TQM components in library system as follows:

**Quality Strategy and its Communiqué**
TQM always directed towards in making quality strategies on continuous basis and effectively communicate it with in all team members (Senthilvelan & Balasubramani, 2013).

**Contribution and Devotion of Team Members**
TQM culture always involved and devoted their team members in every task to get desired goal (Singh, 2013).

**Statistical Tools and Techniques**
TQM tries to think statistically in solving the problems. It is a structured, statistically, robust, discipline management technique. TQM always tries to convert the problem in statistical terms (Bhatt, 2012).

**Standardization**
TQM always set some benchmark so that standard can be prepared (Panday, 2014).

**Audit and Review**
TQM audit and review the quality standards on regular basis within the organization (Zairi, 2013).

**Edification and Exercise**
TQM culture always believes to impart proper training and educate the team members repeatedly (Richards, 2012).
Synergizing Suppliers-Customers
TQM makes strong relationship and communication between supplier and customer (Tarí, Molina, & Castejón, 2007).

Course of Action Control
It is always required to make the system correctly but it is very difficult to make it consistent to work in right manner. TQM always try to make the system consistent and control work in the direction of quality limits (Choi & Eboch, 1998).

Quality Measurements
It is always difficult to measure the quality but TQM implementation having the potential to measure the quality in terms of customers, users, employees, and other team members (Martínez-Lorente, Dewhurst, & Dale, 1998).

If implemented carefully, these TQM components yield positive benefits to libraries such as:

- Will lead to permanent improvement- rapid way outs may give up only one-sided end results.
- Will create a balance between user's expectations and staff potential in achieving the quality services (Samson & Terziovski, 1999).
- Will provides the way of cooperation among the attitude of users and staff to improve the quality standard of service (Selvi, 2002).
- Will directs the librarians to adjust and rearranged their internal system at minimum cost and inconvenience as per user's demand (Rowley, 1996).
- Will forces library managers to develop leadership skills (Masters, 1996).
- Will make a sense to inspire the workforce to make their input in in making decision for providing quality services.
- Will help the library managers to identify key areas within library which needs urgent attention (Clack, 1993).
- Will direct to – “Do the Work Right in the First Instant” - rather than to retort after the complexities occur (O’Neil & Rosanna, 1994).
- Will improve the level of training given to staff and thus increasing skills.
- Will helps in making superior communiqué within the library service system (Edwards & Browne, 1995).
- Will force the librarians to take up nonstop improvement planning as a standard way of managing the libraries (Mohsina Aftab & Khan, 2014).
• Will integrate available physical resources and facilities within the library system for full mutual cooperation to get optimum results in providing quality services (Patil & Pradhan, 2014).
• Will optimized the available space in all directions - vertically, horizontally as well as floor area (Jain & Kashyap, 2014).
• Will provide a sense of safety and satisfaction within the user's and staff (Abhijit & Abhijit, 2014).

1.9.1 Steps in Promoting and Initiating TQM in Libraries

1. Collection and study the literature to understand the various facets of TQM and learning the institute library conditions.
2. Interacting with outside professionals through workshops, seminars and training programmes and by visiting other reputed libraries.
3. Organizing an appreciation workshop for the top management and senior members in the institute.
4. Declaration of the intention by Librarian to introduce TQM benifits in the institute library.
5. Establishing quality council and steering committee with clear cut mandate for directing the library to achieve the goal towards total quality.
6. To constitute a working group to lay down library Quality Policy (QP).
7. Ensuring the communication of the QP to each and every person in the library through training and meetings.
8. To create an organizational framework in term of assigning TQM responsibilities to individual. The person directing TQM activity preferably should be librarian.
9. Preparing of a training plan to impact attitudes of the library staff.
10. Conducting quality awareness through training/workshop covering all the employees of the institute library.
11. Formation of steering committees and promotion programmes giving record of priority items at the unit/division level.
12. Establishing Quality Improvement Teams to identify and analyse important service problems in library.
14. Initiation of group activities such as Quality Circle, Brainstorming Sessions etc.
15. Designing and implementing a system for recognition and rewards based on evaluation of work taken up by Quality Improvement Team.
16. Identifying the actual inputs, outputs, internal and external user’s requirements.
17. Complete review of documentation processes and others records.
18. Identifying problems areas and weaknesses and try to upgrading the system to meet the requirements of the user’s.
19. Simultaneous implementation of the systems and documentation process and procedures, work instructions etc., relating to procurement, process control, inspection, audit and storage etc.
20. Scheduling quality review and quality audit by involving senior members of the institute on regular interval.
21. Some of the steps (as mentioned above) may be combined or their sequences may be changed depending on the type, size and preparedness of the library as well as priorities of the librarian.

1.10 Library Management: A Challenging Task

Library management is a typical task because of the numerous reasons. The prime role of library is to provide its customer the requested service as soon as possible. The term service here includes the request for issuing a book/journal, accessing the available resources on a specific subject, managing the library account of a member and many more. Other tasks involves up keeping of the books resources it contains, to provide the readers an appropriate environment to study, to promote readership and use of library among students etc.

These tasks discussed in the above paragraph are not simple and require proper tools and techniques along with the priceless experience of managing library. Tools consist of many resources like a proper infrastructure, space, an advanced version of software and motivated and experienced staff. Without a proper infrastructure it is not important to manage library at all. Infrastructure consist of an ample amount of space, furniture for storing the books, magazines, journals and other physical assets of library, furniture for sitting and reading for library users etc. Another important thing for managing library is advanced software which is necessary for keeping the record of the assets (issued and in-house). Software also helps in fast processing of the services like issuing and returning of books and certainly helps to overcome human error.
But all these physical assets including infrastructure, software and reading resources cannot be used in a true manner if efficient and experienced staff is not available to manage these resources in optimize way.

Above all, the management commitment and attention towards the library is most important because all required entities can only be available if the desired amount of finance is available and budget allocation of institute depends upon the management motives. Looking at the above discussion, it is easy to see why this theory that ‘Library management is a challenging task’ has garnered a lot of support and is true in every sense.

Thus, there is an urgent call for conceptual approaches/models to enable managements to identify quality shortfalls and plan to launch quality improvement program within the libraries.

1.11 Quality Models for Managing Service Quality of Library

Measurement of service quality is an important aspect in the quality improvement process because it provides feedback about the type of service provided and the extent to which it meets customers need (Douglas, Douglas, & Barnes, 2006). Customer focused quality is essential for every corporate success. Since today’s every organization is potentially a service provider, both to internal and external users, an organization that ignores the validity of service quality does so at its own peril. These quality models enable managements to identify quality shortfalls and plan the launch of a TQM program. A model attempts to show the relationships that exist between salient variables shows the direction for corrective action and are always useful for various reasons such as:

- They provide an overview of factors, revealed after investigation and deliberation, which affects the quality of the organization and the services provided by it.
- They help in better understanding of the quality management systems.
- They help to prepare a framework for launching quality improvement programs and channel the efforts of the organization in the appropriate direction.

The characteristics of a good quality model are:

- It should enable the management to identify sources of quality.
- It should facilitate the identification of quality problems.
- It should pinpoint the causes of the observed quality problems.
- It should suggest possible courses of action to be adopted for improvement and for overcoming problems.
Quality is the source for strengthening and differentiating both the service and the organization from what is offered by its competitors (O’Neill & Palmer, 2004). It is evident that service organizations like libraries that adopt a strategic approach to quality management significantly improve their competitiveness. The launching of a QM program in libraries requires a better understanding of the meaning of service quality, customer expectation and measure of quality and the generic determinants of quality (Senthilvelan, 2013). A clear understanding of these concepts is necessary, but not sufficient to guide the management search for positive improvements in service quality. Thus there is a need for conceptual models to enable managements to identify quality shortfalls and plan the launch of a total quality improvement program. Following quality models have been presented and each of them shows different point of view as follows:

1.1.1 Closed Loop Model for Improving Service Quality of Library

Seven step closed loop model shows in figure 1.3 provide a picture to show how to commence a quality improvement initiative in providing a good service among the libraries. The model is a structured and discipline flow and shows the way by which the services in the library system can be evaluated and improved to satisfy the user's needs.

The step wise description of the model is as explained:

**Step-1 (Management Support):** Top management commitment response is the extent to which the top management is satisfied with the progress of the quality program and has increased its involvement in it. For successful implementation of the service quality in libraries, top management of the college, must have confidence in taking quality initiatives (Marshall et al., 2014). For this reason, presentations on quality model and expected benefits should be made clear to management. In this way the necessary support for analysis of the problem and implementation of the recommendation can easily acquire during execution. Otherwise attempts to implement quality model often fall short because administration is not in such situation to guide and shows the way to be successful.

Involvement of administration and executive support is very much essential in generating good and healthy environment and in creating and deploying well-defined systems, methods and performance measures for achieving quality goals. These systems and methods guide all quality activities and encourage participation by all employees. The development and use of performance indicators is linked, directly or indirectly, to customer requirements and satisfaction, and to management and employee remuneration. Top management should demonstrate understanding, commitment and be involved in the total quality improvement process from day one in order to improve quality in all areas of
the libraries services (Bakti & Sumaedi, 2013).

**Step-2 (Identifying Phase):** Identify the problem and define what the customer wants. The defining of the problem is the initial and mainly significant walk of implement quality project because better considerate of the problem makes the work much easier afterward during the investigation. It is to define the key customer i.e. customer receive the service from the process. The objectives of identifying a difficulty are: -

- To identify the service for improvement.
- To identify the voice of customer.
- To identify the customer's necessities.

**Step-3 (Compute Phase):** Plan the steps for data collection to solving any problem. Data requires to be selected for such interval that all possible variations are covered. It is the process to identifying the source for data collection and to make a data collection plan. Then Critical to quality (CTQs) characteristics of the service will be identified and this phase helped in to determining the factors that contributed to provide quality services in the libraries. Once the CTQs are identified, surveys and interviews can be used to measure their effects on services offered.

**Step-4 (Investigation Phase):** During this process, data collected has to be analyzed to find out the causes which are responsible for creating the problem. It is the process to identify the list of critical causes. Analysis phase examines the data collected in order to generate main concern list of source of variation. Quality techniques like QI model, Brainstorming, Root-cause analysis, Normality analysis, Service capability analysis, Fish bone Diagram, Pareto Analysis etc. may be used for carrying out the analysis.

**Step-5 (Improve Phase):** The process is optimized by removing the causes of defects. The optimal solution for increasing user satisfaction is determined and set in improve phase. Specific causes which are responsible for creating an unhealthy atmosphere identified during analysis is focused in improve phase. This step involves the use of brainstorming and process optimization.

**Step-6 (Control Phase):** Now it is the time that process should controlled to make sure that defects don't recur. It has been observed that if no control, the possibility of old practice would come again. A control phase mainly defines control plans and detailed process monitoring. It provides regular supervising of resources to ensure the process continues in a fresh lane of optimization. It also ensures that the new service conditions are documented properly.
Overall integration of existing resources, Identify the major user problems, Financial Inputs, Financial resources for training and upgradation, Providing healthy physical environment, Providing professional and experienced staff.

Develop data collection plan, Collect and compare data, Assess the process to satisfy customer's need, Identification of Critical to quality characteristics of the service.

Identifying the voice of user, Define the user requirement, Identify the process for improvement.

STEP-1 Management Support

STEP-2 Identifying Phase

STEP-3 Compute Phase

STEP-4 Investigation Phase

STEP-5 Improve Phase

STEP-6 Control and Monitoring

STEP-7 Feedback Mechanisms

Defines control plans specifying process monitoring and corrective action, Provides systematic re-allocation of resources, new service conditions documentation and monitored

Use of brain storming and action workouts, Remove causes of poor service. Service optimization, Preparation of action plan

Service capability analysis, Performance Evaluation using QI Model, Brainstorming to find the causes of poor service, Identify the relationship between a problem and the possible causes.

Figure 1.3 - Closed Loop Model for Improving Service Quality of Library
**Step-7 (Feedback Mechanisms):** For the success of the quality model developed, feedback mechanisms for external and internal customers play an important role. Without feedback it seems that no complaint-no difficulty. Customer feedback always defines the customer requirement and shows a path to develop optimization conditions. Better feedback mechanism must be put into place from the users as well as from the staff in process. It includes written questionnaire, personal interviews, suggestions schemes etc. Extensive guidance requires to be given to make sure that the system is being properly implemented. An organizational atmosphere must be created such that people are relaxed in getting feedback about their service and addressing user’s complaints system in libraries shows the way in removing the user’s complaints and suggestions.

**1.11.2 Service Quality Model for Libraries**

From the literature survey, many key critical factors have been identified related to quality management in relation to users and staff and being arrange in the creation of service quality model as shown in figure 1.4. “The quality of libraries always connected with services provided to users as well as staff and facilities” (Albu, Cristian, & Pistol, 2012). Availability of skilled employees can renovate a sick library into a library providing outstanding service quality. In service organization, producers and users meet and interact always face to face. “To maintain a good quality culture inside the library, with fulfil the expectations of users, it is always required to full fill the expectation of staff involved in library”. “Management vision, leadership and team work plays an important role for library collection development as well as quality service for user communities” (Wilson & Town, 2006).

The model of service success developed is as shown in figure1.4. “It stresses the significance of behavioural considerations among the users and staff participate providing service in libraries and proposes that for successful quality improvement, a balance between library users and library staff expectations is required”. According to this model the important contributor to service quality is the significance and usefulness of the service delivery system.

The model recognizes the key critical factors that considerably control and maintain the service values. It shows how the staff expectations and customer’s expectations go parallel and depends upon with each other to provide quality service.
Figure 1.4 - Service Quality Model for Libraries
(Sharma Chitra and Kadyan Sanjiv, 2015)