CHAPTER-IV REVIEW OF RELATED LITERATURE

4.1 Introduction
4.2 Review of Related Literature
4.2.1 Quality Management Studies: General Aspects
4.2.2 Quality Management Standards and Awards
4.2.3 Total Quality Management in Academic Libraries
4.2.4 Total Quality Management: Case Studies
4.2.5 Total Quality Management: Strategic Planning, Mission, Goals and Objectives
4.2.6 Focus on Specific aspects of Quality Management
4.2.7 Total Quality Management and Information and Communication Technology
4.2.8 Barriers in Total Quality Management
4.1 Introduction

In this chapter, an attempt has been made to provide a comprehensive review of related literature on the problem of research. For this purpose, a retrospective search of literature was made using Library and Information Science Abstracts (1969-2002), Access to Business Information (CD-ROM), Dissertation Abstracts International and EBSCO Online Journals and relevant abstracts were identified. Attempts were made to trace and collect all the original research papers and related documents, where the original documents were not available; the information abstracts have been used for review of literature. The research literature pertaining to Total Quality Management and its application to Library and Information centers has been organized on various facets such as: General aspects of TQM studies, standardization and awards, case studies, quality management in Academic Libraries, strategic planning, Information and Communication technologies, specific aspects of quality management namely customer care, leadership, training and development, statistical tools and barriers in TQM.

4.2 Review of Related Literature

4.2.1 Quality Management Studies: General Aspects

Quality management movement began in the management sector, but a growing concern with quality in other areas of economy has led to its application in service industries, education, Government and other non-profit agencies. The concept of quality management originated in both America and Britain and its application in Japan was predominant. Quality management is the explicit and systematic planning and control of quality of products in an organization. There has been proliferation of
literature in general aspect of quality management over the years and this has led to review the literature.

The study examines the process of implementation of British Standard 5750 and its purpose in library situation under the following headings: Context; approach; use of a consultant; the quality manager; the quality plan; monitoring; costs; registration; requirements; documentation and document control; identifying problem areas; corrective action; assessment; management; and benefits. Byrne identifies the origin of quality management and focuses on some of the initiatives that may assist library and information professionals in their search strategy to improve the service provided to customers in the legal library and information fields. Similarly, New Jersey Library Association Spring Conference 1993, deals with the implementation of Total Quality Management (TQM) principles in libraries. Kent Arts & Libraries, UK, outlines the early stages of the project, concentrating on the practical means of putting quality assurance into place for implementing Total Quality Management (TQM) for all its department services through quality assurance. Lehigh Valley Hospital tried using Philip Crosby Associate's model of total quality management to identify, define and charting the various processes that a research project moves through conception to publication. The resulting charts and process enable the research department personnel to recognize problem areas in the processes and to chart at any given time. This provided both a better understanding of input and output in the research processes, and an opportunity to improve efficiency by correcting problem areas. While the study of Daniel, reviews writings on the Total Quality Management concepts as applied to the organization as a whole and compares this approach to quality measures used for the
selection and indexing of documents for inclusion in a database, methods of maintaining currency and relevancy in existing databases and techniques. This is used by information professionals in the selection of material from a database in response to user needs and further, assesses various methods of quality filtering of input and output.

Jurison presents a conceptual model for describing the role of information systems in a total quality management, which is based on systems theory, provides a framework for understanding the principles of TQM and their effects on information systems. Besides, the study suggests that, the introduction of TQM in the firm's feedback loop by creating new requirements for the information system function. The TQM model is also used to analyze and compare TQM with business engineering. The study conducted on TSB Bank, discusses customer and management feedback and the service gap and concludes that the banking community needs a radical overhaul in implementing TQM, wherein Banks' cost ratios are too high and senior management has tried conventional cost reduction approaches with a short-lived impact. The study of Moores explores a brief history of the quality movement from the early period and emphasis on the emergence of various concepts and approaches, which is often collectively referred to as Total Quality Management. And notes the need to emphasize the determination of customer needs for measuring customer satisfaction by making provision of library and information services. Franklin examines the conceptual basis for the cost of quality in the context of continuous quality improvement (CQI) or total quality management programmes, and its application to libraries, which includes definitions, historical review; and the application of quality
Activity Based Costing (ABC) has been used in manufacturing as a way to assign costs more accurately to products and by information centres to provide better-cost information by allocating costs to activities that cause the expenses to vary. From this, managers can gain a better understanding of the true cost of a product, an insight to excess capacity and a tool to use in total quality management and continuous improvement.

Awang study deals with the concept of total quality management and its basic issues in implementation are dealt in the public and private libraries in Malaysia. Harhai compares Total Quality Management with traditional management techniques and provides a brief history of its development and examines its principles and vocabulary. Further, how TQM can be applied to law libraries has been elucidated with respect to customer-first orientation, top management leadership, focus on continuous improvement, respect for employees and their knowledge, provision of ongoing employee education and training, use of statistical methods, emphasis on prevention rather than detection, vendors as long term partners, performance measures consistent with organizational goals, standardization, cooperation and involvement of all organizational functions, and substantial cultural change. Scott discusses the terms and management activities of business process reengineering and quality improvement programmes often encountered in popular press news articles, at business meetings, in business periodicals, and in academic journals. Considers what is the meaning of each, and how is each related to others and to information technology, how are their activities conducted and what are the advantages and disadvantages of each, what role do information systems professionals play in each of these activities. Hayes explains
the role of Management to maintain continuous quality improvement programmes and
the quality process, which should be dynamic, flexible and effective. It also suggests,
specific actions that can be taken to keep the programme moving forward and gives
some library examples. In another research study by Williams discusses why TQM
is needed; how to define quality; what to select to improve and how to measure this;
why TQM might not work; and whether it will work and provides a brief historical
background to higher education in the US. Taylorism was adopted by industry to
streamline management and productivity and subsequently crossed to education.

Shaughnessy defines the nature of total quality management and the reasons advanced
by libraries and similar organizations for applying TQM in the USA and so also total
quality management with particular reference to its implementation in libraries and
information services has been highlighted. The concept of Quality Management
consisting of three basic activities: quality planning; quality control; and quality
improvement has been explained including Business Process Reengineering concept
and the principal quality systems and self-assessment models by considering employee
suggestion schemes as a means of achieving quality and discusses the importance of
performance measurement of a quality service and identifies the service features that
matter most to the client. Dawes considers the nature of quality assurance and its
implementation in construction industry and reviews the integration of information
services department into the quality assurance system. Further, stresses the continuing
benefits conferred throughout the organization, including an attitude of total
involvement and mutual responsibility across the practice. The study concludes that
the legacy of introducing quality assurance is a sound management system. Kovel
Jeroe examines the literature of change, offering several major perspectives on effecting organizational change and yields insight that can be overlaid on the foundations of continuous improvement. Further suggests, the strategies by which adoption of quality improvement can be undertaken successfully in the libraries.

4.2.2 Quality Management Standards and Awards

Standardization in materials, technique and patterns of service plays a significant role to ensure a smooth flow of information with speed and efficiency in taking effective customer care. The primary tie between ISO 9000 standards and TQM focus on the process of assuring quality by establishing, documenting and maintaining a system designed to ensure the quality of a product or services. Similarly, to encourage the quality culture, the organization often use the quality award criteria, when devising quality systems, this is not just to place themselves in a good position to gain the award itself, but also because, vigor with which they have been devised and the success which the award winners have been able to demonstrate in the market place. The major quality awards include: Deming prize, The Malcolm Baldridge National Quality Award and the European Quality Award.

Brockman examines models of total quality and focuses upon the US Malcolm Baldridge Nation Quality Award model and demonstrates the effectiveness of organization information management practices, which is critical to achieve total quality by means of using the process of benchmarking. The research study carried out by Keiser on Malcolm Baldridge National Quality Award is given to US companies who have excelled in quality management in US. Besides, emphasizes the importance of understanding user needs and considers ways of dealing with
competition and monitoring user satisfaction. In 1990 Federal Express, a package delivery company awarded Malcolm Baldrige National Quality Award, which deals with the quality improvement process and provides examples of where this has worked and discusses quality advantage, quality action teams and the quality deployment plan. Further, Helge deals with an introduction to fundamental ISO 9000 philosophy, definitions and concepts. All twenty main points of ISO 9001 receive a thorough treatment with respect to the library and information sector. Further, it gives the implementation of ISO 9000 in the library and information sector along with relevant quality requirements and analyses reports and the findings of an empirical survey in the Nordic countries, which aims at a general quality improvement of information services and products. Nordic Quality Management Project reports, how quality assurance and ISO 9000 can be implemented in different types of library and information services. Further, considers the problems inherent in making a wide variety of services and explains methods and techniques used to implement ISO 9000 at the test sites.

Japanese industries are well known for their cleanliness and orderliness and their sense of responsibility and discipline of their workers, particularly at plant level. The study describes the Japanese 5-S practice, the logic behind which is that organization; neatness, cleanliness, standardization and discipline at the workplace are basic requirements for producing high-quality products and services, with little or no waste, while maintaining high levels of productivity. It aims to promote the 5-S technique and explore the reasons, why it has been widely used in Japan as the first step towards TQM in both the manufacturing and services industries. The library management
role and responsibilities concerning ISO 9000 implementation based on the Nordic quality management projects gives the purposes of quality management and evaluates different quality management models. Further, it identifies key management roles using Mintzberg's approach and presents an implementation model for an ISO 9000 project emphasizing the managerial functions and tasks\textsuperscript{28}. Information Quality Management (CIQM), UK center is developing methodologies to offer users a degree of quality assurance. Database labels provide mini specifications with quantitative and qualitative information, which allows users to see how far they can 'trust' a database. They are also an implicit standard, which information providers will maintain or improve. The study further suggests that, accreditation could lend labels greater authority and CIQM would entail panels of database users in answering regular surveys in order to provide comprehensive database reviews as noted by Armstrong\textsuperscript{29}.

Lozano\textsuperscript{30} establishes the most outstanding differences between ISO 9000 norms and total quality management as forms of managing quality used in information services. It compares two models of total quality i.e. European Foundation for Quality Management and Malcolm Baldrige Awards. The development of the new quality agency has been outlined by Doherty\textsuperscript{31} and considers some problems of attempting to define "quality" and "standards". It considers these methods of quality assurance in the context of consumerism and compares present methodology with a number of well-known approaches to "quality" and "continuous improvement" and discusses how the new agency might learn from these and embrace more robust methods post the year 2000.
The paper presents the compatibility of assessment criteria of the Baldrige Award with the conformity requirements of both ISO 9000 and ISO 14000. The core concepts and skeleton of the system are explained, and its applicability is illustrated with reference to an implementation case in an engineering organization in Hong Kong. Further, Smith emphasizes for BS 5750 of the British standard for Quality Systems and Total Quality Management for the total organization rather than defined procedures, describing issues of quality. Further, it attempts to determine their importance discussing what might happen if the standard is not adopted or TQM is not implemented and examines cost implications. While in the similar study, the role of ISO 9000 standards in achieving TQM in libraries is examined. It portrays an evaluative picture by highlighting the national and international network, which operates through a variety of components such as libraries, documentation centres, data banks etc. Further it mention that, ISO 9000 as a series of International standards which provides the basic requirements, necessary for establishing and quality system.

4.2.3 Total Quality Management in Academic Libraries

There is a considerable literature in the library and information service sector, which uses one or more aspects of quality management applied to particular library or information service sector. TQM has become a great relevance and essential in the information sector for extending service quality in conformance with customer requirements. In this section, the recent works of TQM in relation to academic library and information service sector has been reviewed.

The study conducted by Butcher, reports the role of benchmarking and total quality management in the functioning of academic libraries. While Stuart and Drake deals
with benchmarking and Total Quality Management in academic libraries, focusing on valued service to customers as competition from alternate information sources revealing the inadequacies of traditional service. Georgia Institute of Technology, Library and Information Center devised a version of TQM to focus attention on customer needs and provide content based, value added information services. As the primary agents in customer interaction, front line staffs are driving innovation and the marketing of services. Statistical quality control to assess information transactions adequately are not yet worked out and anecdotal evidence of success or failure is still the primary measure of service success. The study by Butcher deals about integrating Total Quality Management in a library setting wherein, the staff and faculty at the Oregon State University Libraries had an opportunity to hear a presentation on the University’s work with total quality management dealing with the experience of the library staff in implementing a total quality management programme in the library. Mullen deals with Catalysts for change and reviews the process of total quality management and examines the application of TQM in institutions of higher education. The application of total quality management principles to the preparation for and implementation at Samford University’s Davis Library, Alabama and gives the results of this reorganization.

The quality management approach adopted by the University of Central Lancashire in Preston has been described which focus all activities on meeting the needs of customers, acknowledges that resources are finite and encourages the library to prioritize its efforts to achieve a range of services that truly meet users’ needs. It also outlines the three levels of quality management considered discuss reasons for using
the British Standard 5750 approach and describe lessons learned in the process. Barnard outlines the main features of the model for implementing total quality management in a research library developed by the Association of Research Libraries (ARL) Office of Management Services to create strategies and programmes for introducing quality improvement approaches in research libraries. Gapen describes the significant features of total quality management in the context of its application to the planning process used at Case Western Reserve University Library, Ohio.

Harvard College Library, Massachusetts explores the concept and techniques of total quality management evolved as a result of, and in conjunction with, the Library's strategic planning initiative. Further, describes the setting up of work procedures and practices and concludes with the Task Force on Staff and Organizational Development. Similarly Martin explores the TQM concept of continuous improvement (Kaizen) using the Juran model of quality improvement as the creation of beneficial change and describes the identification of priorities for improvement in academic libraries with an analysis by contributing factors and its application at the University of Hertfordshire, UK. The University of Pennsylvania is committed to total quality management describing the genesis of the TQM effort in the administration of the University and in the Wharton School's MBA curriculum, which has been developed using TQM principles. It further, describes these early activities, together with their growing impact on the deployment of TQM to other schools and areas in the University.

Abbott explores whether performance indicators, after 30 years of debate on the subject, still have relevance for library professionals, and if so, what function they
might have within a quality management framework. It defines the various aspects of quality, and considers why library professionals should be concerned with it and identifies contexts in which performance indicators might be used, and the valuable contribution they can make to the professional librarian, both as internal management tools and for purposes of external accountability. Further, the study explains how Total Quality Management can provide a process by which such indicators can be developed and integrated into the management systems of the organization, drawing on experience with acquisitions processes at Aston University. Buchanan illustrates that, the TQM has been institutionalized within many manufacturing, military and a service organization like colleges and universities in USA and traces the recent US quality movement from its roots in manufacturing, military and its adoption in service institutions and also in higher education institutions. Miller defines quality management (QM), its key principles and their application in an academic library context. Further, deals with team management approach and explains the differences between committees and teams and identifies the barriers and benefits of QM in Bowling Green State University Libraries, Ohio. The resulting Quality Management Information System intended to implement TQM for small manufacturers, and follows ISO 9000 standards at the University of Hanover and Tekniker, a Spanish research institute.

McLean has examined a brief overview of Total Quality Management (TQM) to the development of media to support training in quality through videotapes with burgeoning amounts of material, trainers, librarians and media specialists must take care over the rental and purchasing of Continuous Quality Improvement (CQI) media.
Further, the study offers a set of criteria from the University of Minnesota's Film and Video Division of Continuing Education and Extension for selecting videotapes on CQI training and discusses a consensus model for CQI\(^5\). Lynch discusses the use of the structured total quality management (TQM) approach to problem solving as an effective method of attaining quality improvements in library operations and services, illustrating the TQM seven-step problem solving process\(^5\). The successful application of total quality management (TQM) techniques to the development of a quality assurance project at Monash University, Victoria pays particular attention to the two Pilot TQM Projects established by the library i.e. one on reductions of time to acquire reading materials and the other relating to the feasibility of placing orders for books using the PALS online facility\(^5\). In 1994, the Northern Territory University Library was awarded a grant of 150,000 dollars to improving its own performance and to participate in regional and national initiatives to improve information service delivery and focus on the development of electronic information services and the improvement of services to support coursework\(^5\). TQM is needed for measuring and maintaining levels of quality within organizations with particular reference to the book acquisitions pilot project and other projects undertaken at Aston University, Library and Information Services\(^5\). The activities of Standing Conference of University Libraries (SCONUL) with regard to quality assurance in higher education since 1993 and conclude that SCONUL has an important future role with regard to quality assurance procedures for libraries in higher education\(^5\). However, Cooper\(^5\) reviews cases where Total Quality Management (TQM) has been successfully used in libraries and information services, and outlines its implementation in Oregon State University;
Georgia Institute of Technology; Monash University; the National Information Resource Center (NIRC), and Telstra Australia. The role of quality management in the higher education sector is becoming more significant and has no alternative for universities and colleges but to improve their quality and efficiency. Total Quality Management (TQM) philosophy has been successfully adopted in commercial organizations. Concludes with similarities and differences between higher education and other environments as well as between US and UK approaches57.

Central Missouri State University conducts the internal unit assessment by gathering input from both internal and external clients by using a variety of evaluative tools; investigates the unit's efficiency of operations and communications; client satisfaction; response to new technologies and declining fiscal resources; and the unit's relationships within the organization. This tool offers a practical and productive approach to unit assessment with great flexibility for application in many library settings58. The study conducted by Zaiton deals what is meant by “Quality” from the librarian’s perspective. Questionnaires were sent to all ten-university librarians, all thirteen state public libraries and six selected special libraries in Malaysia. Analysis gives what quality means to librarians, the policy infrastructure available, the obstacles faced by librarians in the implementation of quality measures and the strategies employed to ensure quality services59. Thapisa further reports a study to determine the perceptions of the clients of the University of Botswana Library, as they relate to quality service, and how far the University Library has succeeded in delivering quality services60. Tappenbeck discusses and compares methods of measuring journal use and demonstrates how, on the basis of the data, calculations regarding cost-effectiveness
can be made and has become increasingly important for academic libraries to control
and improve the quality of their services on an ongoing basis.61

The research study examines the need for quality management in academic libraries
which aims to determine the situation of individual libraries and compare them with
others of similar type and provides argument bases against service cuts, make staff
motivated and increase service effectiveness.62 Tam, outlines the, theory and elements
of quality management employing Deming’s method which is used to compare
practices in several academic libraries in Australia. The discussion of the study is
based on personal observation on quality management which includes: evidence of
significant awareness about the value of quality assurance, universities are generally a
less structured search for effective mechanism to assure and improve quality and
quality management in an universities are seen only at the early stage of
development.63

The university libraries at the Pennsylvania State University followed the principles of
TQM in which, the cataloguing development underwent re-organization in to teams
has been described. Strategic use of computing technology in rationalizing and
streamlining its work processes. The study concludes with a frank assessment of the
lessons learned in undergoing re-organization as well as weighing the successes and
failures experienced by the cataloguing department.64 Bender describes, the central
concept of and desired outcome, underlying the university of Arizona libraries
restructuring which includes: being customer oriented, having ongoing needs
assessment, customer self sufficiency, empowerment of staff and teams, data driven
decision making, staff development and training.65 The study describes the quality
movement in Australian university libraries in 1994 based on the responses of questionnaire. The results indicated that, in many cases, university libraries are ahead of their universities in the introduction of quality assurance, processes and management and that a high degree of education in quality was reported within their senior management. Pritchard attempt to define and measure quality effectiveness in academic libraries from traditional evaluative studies to TQM and new research on user defined criteria. The article outlines a number of fundamental concepts and tools common to models of evaluation.

4.2.4 Total Quality Management: Case Studies

Quality management encompasses a management style in which processes are examined and retained with the goal of improving the performance of an organization. It focuses on the customer, advocates the empowerment of employees, and relies on a team structure and long-term commitment. Several case surveys on TQM have been conducted by looking at the importance of TQM in service sector and the same has been highlighted in the following reviews. The Kentucky hospital libraries, Norton Hospital, Alliant Health System Library and Kosair Children's Hospital Library, conducted a study to establish Total Quality Management (TQM), benchmarks and to examine the significance of its role in clinical care. Totally 2,091 questionnaires were distributed to doctors, nurses and allied health care staff covering frequency of use; impact of information received on clinical judgments; cognitive value of the information; and user satisfaction with library products and services. Results confirmed that the libraries' play a substantial clinical role in establishing Total Quality Management in Libraries. Armstrong deals with the role of total quality
management (TQM) in all activity describing three methods used by Telecom Australia's National Information Resource Centre to obtain user input and to review regularly its products and services.

The results of a Total Quality Management survey by ODI, the Burlington, Massachusetts based management consulting and training firm, which specializes in TQM revealed that 62 per cent of executives indicated that they would welcome supplier initiatives to increase communication on quality issues and to facilitate more accurate identification of their requirements and better understanding of their needs. Only 8 per cent reported that their key suppliers consistently involve them in setting quality improvement objectives. Less than one-third believes that their suppliers now thoroughly understand their companies' business and quality goals. However, suppliers, which do connect with their customers on quality, will gain a distinct competitive advantage over those who disappoint. 91 per cent of the executives stressed quality of goods and services provided as being a critical factor in their choice of suppliers. The introduction of Total Quality Management at the American Express Bank has been described to start implementing total quality at New York and found that, people had been creating rework for each other because they never truly understood their internal customers' requirements and learnt not to follow procedure blindly. The technique of organizational mapping to the implementation of TQM in biomedical libraries i.e. Lek Pharmaceutical and Chemical Company, Slovenia and the Institute of Oncology, Slovenia has been explored and comparison was made from the viewpoint of organizational design. The results indicate that, the organization of work
in the two libraries is mainly the same and that differences occur because of the
different demands of users based on the research report of Trzan and Kiauta\(^72\).

Leonard presents continuous improvement techniques as a requirement for design and
development of a database containing detailed health care patient data and role of total
quality management information systems in health care. It further discusses, the
database design, focusing on issues concerning an electronic patient record and
examines the problems in long term care as example and makes recommendations for
developing systems\(^73\). Lawes, focuses on the benefits of quality management to the
library profession, which includes, marketing and public relations, service to the
customers and efficiency within the department and improved staff morale\(^74\). Seay
presents a model for quantifying and categorizing patron comments from a standard
questionnaire in such a way that, the results are organized into seven principles service
determinants. The results further found that, Tangibles and Reliability are the key
concerns of library patrons\(^75\). Nagle explores, the opportunities to strengthen
partnership, evolve new roles and develop new high impact services in support of the
clinical, research and training are discussed. Further, quality initiatives in the
management of the Health Knowledge are described with implications for the library
profession\(^76\). The importance of partnership with wide variety of entities is discussed
along with the need to ensure the security of library users, as well as their right to
privacy. Further, the author emphasizes the need for more effective public relations
and marketing strategies and the importance of listening to the customer as key to
building an organization characterized by exemplary quality\(^77\).
4.2.5 Total Quality Management: Strategic Planning, Mission, Goals and Objectives

Strategic planning is an integral management process in implementing TQM in library and information services. Strategic goals and objectives in the light of the mission of the library have to be adopted successfully by the library for providing quality-based services to the customers. The studies related to these strategic planning aspects are summarized below.

The First Bank System's programme explains the Total Quality Management covering support from the board of directors; preparing an action plan; the vision/mission statement; training senior management in quality; establishing a top level quality committee; conducting a customer satisfaction survey; setting goals for quality and customer satisfaction; incorporating quality performance in reward systems and the quality obsession and describes how a few tactical actions can provide leadership by coupling quality with customer satisfaction. Abbey National has introduced Total Quality Management which have been successful at introducing quality, have a clear vision and mission, giving focus and direction for all employees; a clear set of measurable objectives; a clearly defined flexible strategy; the required resources and skills to carry out that strategy and quality built into the core of the organization. The study made by Line revealed that, Total Quality Management (TQM) is a growing technique for strategic planning (SP), as a process used in libraries which aims at providing a user driven service that is timely, appropriate and free of error. It also notes the difference between the two techniques by emphasizes that SP and TQM, which are complementary, but it is difficult to achieve them concurrently.
Giraldeau compares traditional methods of management with total quality management and discusses implementing, perfecting and evaluating the quality service imperatives and emphasizes the importance of creating change and shifting paradigms, if quality service to customers is to be provided. Victoria University of Technology Library implemented a total quality service (TQS) programme by initial client market research and broad strategy plan. Quality Action Teams have been established and training in process improvement has commenced. A methodology based on the work of Karl Albrecht and Austin Thompson Associates was used wherein they could identify client priorities and involving staff in an ongoing planning and quality improvement process. The study made by Aggarwal found that, integrating TQM concepts into the systems development process results in efficient, flexible, quality software that is developed and delivered on time. It also deals as to how TQM concepts have to be introduced into the development process using statistical tools.

Johannsen reports the Strategic Quality Management (SQM) in the context of library and information science (LIS) inspired by the Japanese Hoshin Kanri for policy deployment approach, emphasizing that strategic management and total quality management (TQM) should be treated as a single integrated management process. Further, compares TQM and strategic management methodologies in order to identify common traits and differences. It also discusses how the theoretical considerations made may influence the validity of practical managerial advice found in the library management literature. Similarly, the same author deals with strategic management and quality management in the context of library and information science (LIS)
focusing on the extent to which business libraries and information centres in Scandinavian countries have implemented strategic quality management by proposing an operational assessment model, encompassing the relevant criteria for measuring SQM in library and information services. The important process of sharing resources through interlibrary lending has been explained with formal and informal strategies that can be implemented to enhance balanced interlibrary loan sharing by giving an example of load leveling guidelines for consortia. Further, it suggests a new model based on total quality management which focuses on creating a system of 'best lending partners', where the relationship of lending and borrowing institutions is valued. The importance of marketing and TQM in libraries is stressed taking into the conditions, which challenged libraries in developed countries to adopt marketing and TQM strategies in Ghana. However, it is not clear, if library managers are effecting the necessary changes to satisfy their users. The study concludes that, there is a need for libraries in Ghana to adopt these initiatives in order to ensure their continued use and importance; failing this the continued survival and sustenance of libraries in Ghana may be in jeopardy.

4.2.6 Focus on specific aspects of Quality Management

4.2.6.1 Customer Driven Services

The centrality of the customer care is the concern of quality management and it occupies a pivotal role in confirming to the TQM philosophy. In fact, assessing service quality is the first step in retaining customers in today's competitive world. Therefore, the customers are the greatest assets for any organization. In lieu of their
significance in TQM, several studies have been conducted focusing on the role of customers and which has been reviewed.

Sirkin deals on integrating TQM in a library setting, defining various elements that make customer satisfied and stress on the customer satisfaction that underlie all successful total quality management programmes. It concludes with improved customer service and satisfaction, is a long-term strategic initiative and requires a commitment of time and money to provide training for staff. Maximizing customer satisfaction; cross-cultural aspects of high performance teams; strategy and decision-making in information centre and Newman and Hulser have propounded forming and utilizing quality improvement teams. While the study of Rowley seeks to explore various aspects of total customer experience in libraries, initially through three case studies, and subsequently by identifying some of the factors that might influence the customer experience. Proposes a methodology using walk-through audits for monitoring total customer experience. Total quality management is a commitment to the continuous improvement of work processes with the goal of satisfying internal and external customers. It is the customer that matters in total quality management; the process is only the means to satisfying the customer and also shows how this principle can be implemented in the information systems environment as enumerated by Ward.

Customer care lie at the heart of a library, yet libraries have not been serious in identifying, creating and promoting patron initiated service programmes and this has resulted in an erosion of the relationship between readers and the library. To solve this problem, the quality of reader services adopting the principles of total quality
management and the Deming management philosophy should enhance programmes. The case study of Total Quality Management in a leading US bank, the Wal-Mart chain of department stores and Sony and Honda outlines ten clear quality management trends that there is absolutely nothing wrong with forecasts as long as we do not use them to predict the future. The study revealed that, companies must now aim for higher degrees of satisfaction and loyalty in their customers and to do this, they must focus directly on what the customer wants. Fisher explains how TQM fits into organizational change and emphasizes on customer service and empowerment falls right in line with current thinking on organizational change and as such commitment to TQM should be organization-wide, which is hard to obtain.

Total Quality Management (TQM) is a process, which focuses on understanding customer needs and improving customer service and satisfaction. A user survey was conducted in the Library to assess user satisfaction and make recommendations for improving library services to better meet consumer needs. It is found that, most of the consumers were satisfied with the materials and services provided by the library and concludes with recommendations for improving library services and strategies. Public libraries in Latin America and their effectiveness in using quality management to improve the services they provide suggesting, each of the libraries, know specific characteristics of their institutions and their clientele for implementing quality management in Latin American public libraries. BLDS customer service improvement initiatives including the setting up of a total quality management programme in conjunction with a specialist consultancy, and its implementation through a steering group, process improvement groups and a series of kaizen
continuous improvement of process workshops. TQM has contributed significantly to improvements in speed of service and the quality of relationships with customers. Customer service improvement initiatives including courses, clinics, link-up events, the marketing department’s customer retention programme and the Centre’s customer publications and database access services of British Library Document Supply Centre and an outline of its customer base has been discussed. Setting up of a Total Quality Management and its implementation through a steering group, process improvement groups and a series of kaizen continuous improvement of process workshops and concludes that TQM has contributed significantly to improvements in speed of service and the quality of relationships with customers. Viljoen and Underwood explain that, TQM can help libraries to establish a culture of never ending improvement of quality of products and services. By doing so, library management indicate to funders that they are prepared to make the most of available financial support to meet the demands of users.

The framework for information design for total quality management implementation and its tasks include identifying customer satisfaction variables (CSV), translation of CSV to firm response variables (FRV), benchmarking and continuous improvement has been explored in this research study. Mapping the TQM implementation tasks for the communication interfaces generates appropriate information systems component inventories for different communication interfaces. The final information system design is achieved by integrating IS components at technological, functional, and strategic levels providing a large manufacturing firm. Rowley gives thought about users as customers to explore the nature of customers, and in particular, identify the
various stakeholder groups in a public sector context. Further, the studies explore the concept of marketing and the associated ideas of loyalty, and reflect on aspects of customer relationship. Finally, customer compatibility management offers a new perspective on the role of customers in contributing to the experience of other customers\textsuperscript{101}. The research study conducted by Hernon, covers the literature of many disciplines and professions including library and information science and emphasizes the role of service quality and customer satisfaction in achieving TQM in academic libraries and further offers a research agenda\textsuperscript{102}

4.2.6.2 Leadership

The success of TQM largely rests on the leadership ability to lead the team by communicating a clear purpose and vision. Leaders nurture their task to become the very best at their jobs and that builds quality into the process. In recent years, the management of change instituting the role of leadership in quality management has received a considerable attention from the research community. The major studies in this area have been reviewed as under

The organizational objectives of Brent, UK council's total quality programme are strong and committed leadership; a belief in total quality; clear accountability; customer led services; total ownership of change; simple and direct communication; maximum devolution and strong staff development. The programme has produced an 18 per cent increase in customer satisfaction, a 46 per cent reduction in local taxation and the position of runner up in a prestigious total quality award. Further, specifies standards and levels of service for all parts of the arts and libraries division\textsuperscript{103}. The overall information needs of organizations operating under the TQM model has been

128
analyzed and focuses on the specific information needs of the senior executives. While St-Clair argues the value of total quality management to the success of information delivery in libraries, describing the basics of quality management for information management and investigates two features viz. the desire for quality, and the enthusiasm and support of senior management, both vital to the success of TQM. Teams have pivotal role in total quality management (TQM) describing how group decision support systems (GDSS) can be used to increase team productivity and effectiveness within the TQM framework and further deals the advantages of GDSS. Spiegelman has implemented a combined total quality management and competency based performance system. The system shifts the focus from what the results of employee actions are and how they go about it in accomplishing each of their tasks. While Clair reports that, management practices in the information environment includes defining quality management; initiating quality management programmes; improving customer care practices; the route to continuous improvement in information services; building trust and teamwork; senior management's role in the total quality plan; and developing and implementing the quality management plan.

The Karpin Report, “Enterprising Nation”, identified five challenges for leadership and management skills which includes: to develop a positive enterprise culture; to upgrade the capabilities of the vocational training and education sector, capitalizing on the talents of diversity, best practice management development and achievement of best practice.
4.2.6.3 Training and Development

Training and development form the core aspects of human resource investment for the successful implementation of quality management. Without the training sessions, quality management will be colossal failure. Proper training will provide the library professionals to implement TQM in their respective areas; toward the pursuit of quality improvement. Studies relating to training and development are reviewed as below:

A Virginia Beach Public Library describes how training in Total Quality Management plays a significant role resulting in the appointment of a team to establish the causes of the noise and to recommend ways of dealing with it\textsuperscript{110}. Loney and Bellefontaine\textsuperscript{111} focus on the training and skill requirements in implementing a quality customer service plan and in the successful application of total quality management to libraries. The innovative ideas of TQM in Reserve Bank of Fiji (RBF) and TQM structure in the development of teams, and assess the advantages and negative aspects of TQM has been explored by Fong \textsuperscript{112}. Continuing education courses in TQM for medical librarians have succeeded in meeting the training needs of librarians. This report is a result of a study of a continuous education course, entitled Total Quality Management in Health Care and Health Sciences Libraries of USA and Canada and notes the goals and objectives of the courses and the results obtained found to be satisfactory and meet the expectations of the majority\textsuperscript{113}.

A seven step process, based upon the total quality management cooperative problem solving principle was adopted at Wayne State University Libraries, to construct a cost effective rotational cross training programme designed to improve reference and
referral service among its five libraries. The study comes out with practical steps for managers and librarians in formulating programme objectives and structure, and provides a perspective on changing manager and librarian roles in service education\textsuperscript{114}. Shanghai's public library describes the planning and implementation of a quality service programme. The organization and administration of the library’s programme is described, including the involvement of library staff at all levels, the development of service norms, and the ways by which the staff were encouraged to deliver quality service\textsuperscript{115}. The research study by Hall presents the findings of research that aimed to develop a better understanding of the skills required in teamwork of British University libraries and the best ways of developing the skills. The teams studied were found to be leader focused and the most frequently cited examples of good teamwork tended to depend on attitudes rather than skills\textsuperscript{116}.

4.2.6.4 Analytical and Statistical Tools

The philosophy behind applying analytical and statistical tools in quality management is to make the quality improvement process a powerful tool, which is used for solving the problems and continuous quality improvement processes. These tools are also useful on exercising the right management decisions to cope with the complexities of management processes. Among the quality tools, Servqual and Benchmarking are the two important tools for strategic performance improvements. Servqual instrument is used for measuring the customer's expectations and perceptions and it has enormous scope for application in the library and information sector. Similarly, Benchmarking is the important quality tool used to measure and compare the work processes in the library with a view to increase the library performance. It evaluates and compares
how key functions and process are performed within one's own organization with other organization that is leader in their specialized field. The following review describes briefly, some of the work carried on statistical tools of quality management including Servqual and benchmarking.

The study conducted by Coleman and Blair describes the application of various TQM tools in cataloguing operations, focusing on the methods adopted by libraries to identify user needs and to improve services in order to meet user needs, which are based on the TQM philosophy. Similarly, the importance of customer service in record management and evaluation has been explored which includes: use of benchmarking in the improvement of an organization; Servqual method and Service level agreements. Jones reports suitable assessment techniques for quality management in libraries in order to determine and demonstrate their success in achieving total quality. Self-assessment models reflect the principles and ideals of good management practice. The present study will provide alternative models if necessary, offering self-assessment 'tool kits' for local application.

4.2.6.4.1 SERVQUAL

Halm explains the value of implementing a total quality management (TQM) approach to information brokerage, and the use of the SERVQUAL methodology and procedure to assess the quality of services and offers a practical advice to deal with internal quality aspects of their products and services to meet the customer demands. Total quality management is being applied in the service sector and they are nevertheless, concerned with issues like seeking to achieve better service by programmes to shape employee behavior, encouraging attention to the customer's requirements, and coping
with the inherent variability engendered by interaction between employees and customers; and are particularly relevant to the distinctly “service” aspects of businesses. Research which seeks to show that consumers’ perceptions of service quality are based on the difference between their actual experience of the service and what they expected form a platform for both definition and measurement at the end, models of service quality given with considering many factors along with tools for measurement. The need for information brokers to adopt TQM to assure the quality of their products and services has been discussed. The study also emphasizes the importance of considering the customer's perception of quality; Aspects of quality that should be addressed by TQM brokers; SERVQUAL method and procedure to assess the quality of services. White reviews the service marketing literature for models and data-gathering instruments measuring service quality, emphasizing the instruments SERVQUAL and SERVPERF. SERVQUAL, as part of a project to develop an instrument for measuring service quality in special libraries, assesses the applicability of the two instruments to special libraries and information centers. Netecki discusses the implications of implementing an evaluation tool in measuring customer service quality on academic library administration and determinants by using the SERVQUAL standards.

The implementation of TQM in the service environment as a means of measuring service quality has been explored by establishing some basic definitions. Philip and Hazlett focus on SERVQUAL, and its viability, as a comprehensive measurement tool for the service industry as a whole and suggested that it does not go far enough. The dimensions of SERVQUAL do not adequately address some of the more critical issues
associated with the assessment of individual services. SERVQUAL scale, a model, takes the form of a hierarchical structure - based on three main levels of attributes - pivotal, core, and peripheral (P-C-P) is proposed. This P-C-P model has the ability to span any service sector since what is proposed is a skeletal framework within which to consider respective services\textsuperscript{126}. The results of a study carried out by Coleman and Bair to measure service quality in an academic library found that, how the SERVQUAL survey measures quality outlining the objectives of the survey\textsuperscript{127}. Student perceptions of service quality in higher education, particularly the content and delivery of course units, are researched using a performance-only adaptation of the SERVQUAL research instrument. A principal components factor analysis performed on data collected from a sample of 333 undergraduate business and management students suggests that students' perceived service quality has three dimensions: “requisite elements”, “acceptable elements” and “functional elements”, which are of a practical or utilitarian nature. A comparison of perceptions of service quality between first and final year students suggests that perceptions of service quality elements change over a period of study, with “acceptable elements” having increasing importance. Implications for course management teams are discussed, and suggestions for further research are made\textsuperscript{128}. The study conducted by Cook and Thompson to explore the reliability and validity of SERVQUAL scores used to evaluate perceptions of library service quality and history of SERVQUAL along with its library setting, methodology, results, discussion and implications for library service evaluations\textsuperscript{129}.

Empirical research on service quality and satisfaction has unearthed multitudinous archetypes by various researchers across the world. However, all of them have been
primarily built on the SERVQUAL instrument, a 22-item scale that measures service quality. The efficacy of SERVQUAL in measuring service quality has been criticized by different authors for diverse reasons, such as the operationalization of expectations, the reliability and validity of the instrument's difference score formulation and the scale's dimensionality across disparate industrial settings. In spite of these, there is a universal conformity that, the 22 items are reasonably good predictors of service quality in its entirety. This paper endeavors to unearth and unravel such critical constituents of service quality which, hitherto, have been untouched in the literature, and advances a framework that could form the bedrock for a better understanding of customer perceived service quality and its determinants.\textsuperscript{130}

4.2.6.4.2 Benchmarking

St. Clair\textsuperscript{131} describes, the two major challenges in the application of benchmarking, total quality management and the learning organization as management techniques in library and information services work. It is possible through library manager's interpersonal skills in determining what is that management expects from the library and information services unit and how the services provided meet the information needs of the organization. Further, the study highlighted on special library and information service managers, who are concerned with benchmarking and total quality management\textsuperscript{132}. Similarly Allan\textsuperscript{133} deals with Benchmarking and Total Quality Management. Benchmarking is an important means in helping organizations toward total quality management and describes how this technique can be used in a research environment of a Sandia National Laboratory. The study also outlines how information resource involvement was using prototyped and discusses the role of the
information specialists by applying benchmarking methodology, which identifies information components at each step and lessons learned with some general guidelines.

The Department of Defense began a quality improvement initiative in 1980 based principally on Edwards Deming's philosophy of continuous improvement by using benchmarking and total quality management. Quality management has since been implemented agency wide. Global economic and political forces are causing enormous changes in the US military and affecting the success of individual programs and illustrates, through a case study, how top Department of Defense level decisions have affected one defense research laboratory and driven changes at the lowest field level\textsuperscript{134}. Similarly Pearson\textsuperscript{135} addresses Total Quality Management and benchmarking in the general frame of organizational learning, including the pitfalls that can hamper the contribution of TQM to improve competitive advantage. The three topics explored in this study are: why managers and executives currently find themselves faced with an array of 'programs of the week'; the fit between one such program, TQM, and organizational learning; and potential misuses inherent in TQM. The Australian Quality Council methodology was selected as a recognized external indicator of achievement and to provide valid benchmarking and notes that new strategies were found to be needed to continue to build on existing strengths and to assimilate continuous review and improvement as a means of managing future change\textsuperscript{136}. Quality function deployment (QFD) is a systematic methodology for quality improvement and product development. The quality of a product or service is ultimately judged in terms of customer satisfaction. Customer satisfaction and benchmarking can help decision

136
makers to identify areas for improvement, make strategic decisions, and set targets on desired satisfaction performance. The main purpose of this paper is to study procedures and methods for successful benchmarking in QFD for quality improvement. A case study was presented to illustrate the use of this method. This paper may provide a road map to achieve world-class performance through benchmarking in QFD, especially for small to medium-sized enterprises or companies in developing countries. Bohike provides a complete overview on Benchmarking as a TQM tool used to measure and compare the work processes of libraries for strategic performance improvement.

4.2.7 Total Quality Management and Information and Communication Technology

There has been some interest in examining how information and communication technology might be used to support quality management for library and information services. A great deal of management information produced automatically from the library computer systems. The use of Information Technology has been developed and operationally tested for effective decisions making. The main research activity in the area of quality management and Information and Communication Technology is undertaking a ground clearing study on performance measurement over a period of time. Such studies have been elaborated below.

DiMattia states that, information technology facilitated information access without limitation on scope, time or place. Although the assurance of quality in products and services has long been a popular goal and an indelible segment of employment training, quality has been identified as a key ingredient for marketplace success and relates this concept of quality and total quality management for serving information
users through remote access technology and discusses personnel, user communication and equipment support\textsuperscript{139}. The Library Association and the UK Online User Group to improve the quality of databases, and in doing so, work toward developing a set of metrics by which database quality can be measured, have set up the Centre for Information Quality Management (CIQM). The study outlines the origins and objectives of this service and details CIQM's quality measures offering a free service to users and welcomes calls on any of these aspects of database use. A comprehensive data and tracking system helps UCS chart a clear course for continuous improvement in its customer relationships, internal operations, supplier partnerships and business performance. Besides, the study discusses strategy; translating goals into key initiatives; employee empowerment and training and information technology\textsuperscript{140}. Similarly Armstrong looks at the problems of imposing quality standards on database products and decides how to measure their quality. The UK Online User Group and the Library Association (LA) has set up the Centre for Information Quality Management (CIQM) to act as a clearinghouse to which database users may report problems relating to the quality of any aspect of a database being used. Further, deals with the future development of database quality\textsuperscript{141}. The Centre for Information Quality Management was set up by LA and the Institute of Information Scientists' UK Online User Group to act as a clearing house to which database users could report problems relating to the quality of any aspect of a database being used by providing examples of some problems encountered and recommends labeling of databases as a guarantee of the subject and coverage, contents and their accuracy and consistency\textsuperscript{142}. The study by Ward found that, the principles of TQM can be modified and successfully applied to
information systems that have made great strides in implementing total quality management and addresses issues of quality management in the information systems department\textsuperscript{143}.

Information technology is contributing for continuous quality improvement throughout the library organization. Hypertext and hypermedia offer new ways for decision-makers to gain easy and relevant access to information. By combining hypertext with total quality tools, decision makers are able to explore the richness of databases in more creative and useful ways. Further, it describes how a hypertext system can be developed which can help employees to improve their job performance through better problem solving\textsuperscript{144}. The centre for Information Quality Management, UK worked on database labeling methodology for assuring database quality to users. It describes database labeling, reports on a survey of database user satisfaction, and discusses the advantages and disadvantages of database labeling\textsuperscript{145}. The Centre for Information Quality Management (CIQM) investigating the idea of database labeling as a solution to the quality issue, discusses the kind of database quality management and its problems regularly encountered in their activities\textsuperscript{146}. Armstrong describes database labels for development, its purpose, content and production of database labels, and includes a copy of the first label produced\textsuperscript{147}. The role of Information Technology (IT) in the quality movement has been proven but underutilized and notes the benefits for companies which focus on quality and those which the use of IT can bring about. Further, suggests that IT departments have been reactive rather than proactive, involved only peripherally in their organizations' total quality programmes and stresses that IT must be a partner in an organization's efforts to institutionalize
quality. Armstrong investigates the quality issues in online and CD-ROM databases and outlines the founding of the centre, its aims, staffing, and funding. Further, explains how the centre deals with user queries and the problem users report and discusses future plans and the vendors' responses.

4.2.8 Barriers in Total Quality Management

The organizations implementing TQM will improve their chances for success, if they are more sensitive to the obstacles encountered from the TQM counterparts. The lack of success in designing an effective TQM programme in due to lack of focus on strategic planning and core competencies and obsolete, outdated culture. The various studies related to barriers in implementing quality management have been reviewed below.

The research study deals, difficulties in implementing Total Quality Management at TNT Express Worldwide in 1990. They gave much time on awareness training for improving results by considering various measures like: preparation of managers for change, remaining aware of new total quality ideas, issues and tools and staying close to the customers to avoid straying from reality. While Coffey emphasizes, Total quality management (TQM) has a strong hold in manufacturing industries, but little in service organizations. Barriers include the TQM language; attitudes of professionals to clients; a steep learning curve on statistical methodology and implementation in a hostile. Library staffs are committed to the service ethic is a positive force and describes the challenge of redefining the notion of 'quality service' from the viewpoint of the client rather than from the professional or organizational focus, and examines the important elements of organizational culture which will 'make or break' TQM.
implementation\textsuperscript{151}. While a four-step Total Quality Management methodology addresses serious operational problems in Mona Campus Registry Filing Room and by following this process, the university overcame a number of challenges to achieve greater operational efficiency and improved customer service\textsuperscript{152}. The study of Fisher revealed that, the library suppliers indicated number of problems inherent in specifications produced by libraries, such as a lack of clarity, poor structure, variable in technical understanding and with too great a focus on basic functionality that has been tried and tested. A model specification of system requirements for libraries is recommended\textsuperscript{153}. 
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