Chapter 2

ISO 9000 Certification

International Organisation for Standardisation (ISO) is the world’s largest developer and publisher of International standards. The term ISO, derived from the Greek word “isos”, means “equal”. ISO is a network of national standards institutes comprising of 162 countries, one member per country, with a central secretariat in Geneva, Switzerland, that coordinates the system.

ISO is a non-governmental organisation that forms a bridge between private and public sector. On the one hand the member institutes are part of the governmental structure of their countries or are mandated by their government; on the other hand, other members have their roots uniquely in the private sector, having been set up by national partnerships of industry associations. The private and governmental member partnership can enable a consensus in developing the standard that meet the requirements of business and broader needs of the society. Being the world’s largest developer of standards, ISO has developed and published more than 16500 international standards between 1947 and 2008. The international standards developed by ISO ranges from agricultural and construction, through mechanical engineering to medical devices. The newest of all is the standards for information technology developments.

When products, systems, machinery and devices work well and safely, it is often because they meet standards. Standards make an enormous positive contribution to most aspects of human life. Standards ensure desirable characteristics of products and services such as quality, environmental friendliness, safety, reliability, and efficiency at an
economical manner. Standardisation of screw threads keeps the table, ceiling fan and the wheels of a truck together and solves the repair and maintenance problems. Standardisation helps us to adopt interchangeability concept and so that the purchase price and the cost of up-keeping a product will be low. Standards establish an international consensus on terminology which makes technology transfer easier and safer. The standardised dimension of freight containers makes the international trade faster and more economical. The standardisation of ATM cards makes it fit to all ATM machines, irrespective of the owner of the machine. Standardisation symbols on danger signals and warnings will avoid misinterpretation. Standard computer protocols allow the vendors to talk in the same platform. The standards are the result of a particular standardisation effort approved by a recognised authority.

The industrial standards can be categorised into three:-- International standards, National standards or Industry standards, and Company standards.

The need for international standards is essential for growing international trade. There are a number of voluntary standard’s organisations working for developing international standards. The ISO 9000 series of quality standards and metric standards are examples of international standards.

The national standards include national trade association, engineering societies and national testing societies which are contributing to the development of standards and the methods of testing.

The organisational standards are developed by the firms themselves. Some examples include letter pad, size and color of the paper used in communication, conveyer speed, dress code etc.

The standards help consumer by giving them a convenient objective basis for buying the products of right quantity and using that product in the intended manner to derive satisfaction. In a manufacturing
process, the quality of goods produced depends considerably upon the type of materials used in the process. If the aim of uniformly high serviceability of the items manufactured, standards should form the basis of all purchases for materials which are required for the production of that product. By practicing standardisation the number of items produced could also be reduced, thereby the quality of an individual item increases and this can lead to most economical price.

As quality became a major focus of business throughout the world, various organisations developed standards and guidelines to enable effective marketing of products and services globally. To standardise the quality requirements that are to be followed by the organisations around the world, a specialised agency for standardisation, the International Organisation for Standardisation (ISO) has been formed.

ISO was born from the union of two organisations. The ISA (Instructional Federation of the National Standardising Associations) established in New York in 1926 and the UNSCC (United National Standards Coordinating Committee) established in 1944. In October 1946, delegates from 25 countries, meeting at the Institute of Civil Engineers in London, decided to create a new organisation, and the objective of that organisation was to facilitate the development of international standards. The new organisation, ISO, officially began operation on 23 February 1947. In April 1947 a meeting in Paris produced a recommended list of 67, ISO technical committees (TC’s) about two thirds of which were based on the previous ISA committees. By the early 1950’s Technical Committees were starting to produce what were known at the time as “Recommendations”. The basic idea of post-war international Standardisation was to derive international standards from those already developed nationally, and then to re-implement them nationally. ISO’s recommendations were therefore only intended to influence national standards.
After issuing several inspection system documents in the 1950's, the US military later integrated them into a set of requirements documents and issued them in December 1963 with the names of Inspection System Requirements and Quality programme Requirements. Thereafter, documents issued were on standard clauses in procurement, contracts, required control over final inspection and testing, and then on “Calibration system Requirements”.

Similarly, Canadian series of standards were issued, in four levels, in 1970's and the British standards were issued, in three levels, in 1979 as quality management systems.

In the meantime in December 1979 the United States issued Generic Guidelines for quality systems. This was a menu of quality management elements and each organisation could choose the elements which they felt were helpful, allowing them an almost infinite degree of tailoring.

Since different standards for different Countries were creating problems to international trade, necessity was felt for developing internationally reorganised quality management standards. The ISO technical committee (TC) 176, “Quality Management and Quality assurance”, was therefore established in 1979. The first standard issued by ISO 176 was ISO 8402 (in 1986) which standardised quality management terminology. It was followed in 1987 by ISO 9001, ISO 9002, and ISO 9003, which provide the requirements for quality Management system's operated by organisations with varying scopes of activity, from those including an R&D function, to those uniquely carrying out service and maintenance., These standards were completed by ISO 9004, providing guidance on quality management systems. These standards were later on revised in 1994, and then extensively revised in the year 2000.

ISO launches the development of new standards in response to sectors and stakeholders that express a clearly established need for
them. When an industry sector or other stakeholder group communicates its requirement for a standard to one are of ISO’s national members, the latter then proposes the new work item to the relevant Technical committee of the ISO in that area. When the new work item does not relate to existing committees, proposals may also be made by ISO member to set up new technical committee to cover new fields of activity. To be accepted for development, a proposed work item must receive the majority support of the participating members of the ISO technical committee which, amongst other criteria, verifies the “global relevance” of the proposed item. In addition to the technical committees that address to standardisation in a specific field, ISO also has policy development Committees addressing the standardisation needs of developing countries.

ISO standards are usually assigned a catalogue number automatically. When the first output of ISO’s Technical Committee 176 was nearing completion, ISO was already approaching a total of 9000 published standards. ISO realised even then that ISO/ITC 176’s standards would have a significant impact and so decided to give the series the next available round figure-9000-as a designation, because round figures are more memorable.

The ISO 9000 and ISO 14000 standards families are among the ISO’s most widely known standards ever. The ISO 9000 has become an international reference for quality requirements in business to business and business to customer dealings and ISO 14000 set standards an organisation needs to maintain in terms of its environmental challenges.

organisation with respect to the compliance of these standards is ISO 9001: 2000 certification.

The ISO 9000: 2000 is the Quality Management Systems (QMS) - fundamentals and vocabulary discusses the fundamental concepts related to QMS and provides the terminology used in other two standards.

The ISO 9001: 2000 is the Quality Management Systems (QMS) requirements-the standard used for registration by demonstrating conformity of the QMS to customers, regulatory, and the organisations own requirements.

The ISO 9004: 2000–Quality Management System (QMS)-guidelines that an organisation can use to establish a quality Management System focused on improving performance.

The ISO 9000: 2000 standards structure has four major sections: Management Responsibility. Resource Management, Product realisation, Measurement Analysis, and improvement and are supported by the following eight principles:

Principle – I: Customer – Focused Organisation – organisation depend on their customers and therefore should understand current and future customers needs, meet customer requirements, and strive to exceed customer expectations.

Principle – II: Leadership – leaders establish unity of purpose and direction of the organisation – they should create and maintain the internal environment in which people can become fully involved in achieving the organisation’s objectives.

Principle – III: Involvement of people – People at all levels are the essence of an organisation and their full involvement enables their abilities to be used for the organisation benefit.
Principle – IV: Process Approach – A desired result is achieved more effectively when related resources and activities are managed as a process.

Principle – V: System Approach to Management – identifying, understanding, and managing a system of interrelated processes for a given objective improves the organisation efficiency and effectiveness.

Principle – VI: Continual Improvement – Continual improvement should be a permanent objective of the organisation.

Principal – VII: Factual Approach to Decision Making – Effective decisions are based on the analysis of data and information

Principle – VIII: Mutually Beneficial Supplier relationship – An Organisation and the suppliers are interdependent, and a mutually beneficial relationship enhances this ability of both to create value.

The ISO 9000 registration provides a number of benefits to the organisation, includes higher perceived quality, improved customer satisfaction, Competitive advantage and reduced customer’s quality audits. Internally ISO 9000 registration brings better documentation greater quality awareness, positive cultural change and increased efficiency and productivity. Also ISO 9000 certification provides a basis for carrying out continuous improvement. Prompt and efficient delivery of the products and service can be ensured through the certification.

The ISO 9000 series is the standard of quality accepted by the almost all countries. The acceptance of these standards is quickly spreading throughout the globe. It simply makes sense to adopt one quality standard that can be used by cooperation throughout the global community as a trademark for verifying the quality of services and products provided by an organisation. It is less costly than complying with the quality standard issued by various corporations or countries to deal business with them.
All the organisations now face competitions from global marketers. There is a continual need to prove the quality / superiority of the goods and services provided to the customers to compete in the present global market. The ISO 9000 registration assists the organisation in developing and maintaining a competitive advantage over the non-ISO 9000 certified firms. The ISO 9000 certification and the training programs obviously help the organisation in meeting its quality objectives, but the ISO 9000 certification is a one-time, non-reoccurring event. True success in the implementation of ISO 9000 quality management system can be achieved only when that programme is functional and continuing. The ISO series standards ensure this by providing not only for the initial registration auditing but also for on-going compliance audit. This provides an additional benefit to suppliers and customers of the company that they are assured that the quality system is functional and periodically monitored by external independent auditors and this usually eliminates the need for additional compliance audits.

The language used in the 1994 and 2000 revisions of the ISO 9000 family shows changes in the emphasis to increased customer focus, a process rather than procedure approaches, continuous improvement and skills- based approach to people management. The ISO 9000: 2000 is a major step forward from the earlier versions paying much more attention to human resource management.

There are a few steps that are necessary to implement ISO 9000 quality management system effectively.

The first step in the implementation of the ISO 9000 quality management system is to ensure top management commitment. Top management must be willing to commit the resources necessary to achieve certification. Without the top Management support, the effective implementation of the quality Management System may not be possible. The Top management must therefore in the very beginning voluntarily
undergo an orientation course to develop the right attitude or at least the organisation’s consultant must explain the ISO standards and it’s prerequisite to the management.

The next step is to appoint a management representative (MR). The management representative is a person who is responsible for coordinating the implementation and maintenance of the quality system and is the contact person for all parties involved in the process, both internal and external. The management representative can be a member of the top management group who is able to ensure that the quality system is effectively implemented, documented and maintained.

An awareness program is to be conducted in the organisation. Because the process is going to affect every member of the organisation and require everyone’s cooperation, it stands to reason that everyone should understand the quality system.

After making everyone aware of the organisation’s intentions to develop the quality system, an implementation team should be formed. This team consists of members from all areas and different levels of the organisation. Training on quality procedures should be given to the implementation team, supervisors, and internal audit team. The next step is the selection of owners from the implementation team for each of the system elements. Owners may be assigned more than one element. Each owner has the option of selecting a team to assist in the process. The more the people involved the more effective will be the system. Conducting a review of the present quality system is the next step. Copies of all the quality manuals, procedures, work instructions, and forms presently in use are obtained. These documents are sorted into the system elements to determine what is needed to complete the system. This activity is a gap analysis and can be performed by the element owners and their teams or by an external consultant. The next step is to prepare written quality policy and procedure manuals. Write
appropriate work instructions to maintain the quality of specific functions. There should be a formal launching of the programme to keep this programme visible to everyone in the organisation.

Training on quality procedures should be given to the implementation team, supervisors, and internal audit team. The time schedule for the implementation and constitution needs to be planned. The next step is to perform a review of the present quality System.

Next step is integration of the policies, procedures and work instructions into the day-to-day working of the organisation, and document what is to be done. The next step is to conduct internal audit of the quality system. This step is necessary that the system is working effectively and to provide arrangement with the information for the comprehensive management review. Any correction to the system, if necessary is made as and when the need arises. A cross-section of trained people should be used for the internal audit team. The management review is used to determine the effectiveness of the system in achieving the stated quality goals. The system is revised as needed. The next step is of conducting the registration process. The registration process involves choosing a registrar, submitting an application, and conducting the registrar’s system audit. The selection of the registrar is done on the basis of cost, lead time, customer’s acceptance of the registrar, registrar’s accreditation, familiarity with the industry etc. The application for registration should also include supplying the registrar with the policy and procedure manuals for their review.

The ISO 9000 is a set of good basic practices for initiating a basic quality Management System and is an excellent starting point for companies with no formal quality assurance programme. For companies in the early stages of developing a quality programme, the standards enforce the discipline of control that is necessary before they can seriously pursue continuous improvement.
2.1 Total Quality Management and ISO 9000 certification

The consumers evaluate the quality of a product or service through direct purchase and use of that product. The satisfaction gained by that product will determine the repeated purchase and recommendation of that product to others. But in the present time, it may not be viable and possible for the customers to buy and test all the products available in the market. The customer determines the quality of the product through deciding whether that is certified by a reliable agency. The most reliable, most widely accepted and used process certification for the organisations in the world is the ISO series standards.

The customers of an ISO 9000 certified organisations consider “ISO 9000 certification” as a synonym for quality. The consumers expect the best quality products from an ISO 9000 certified organisation. The ISO 9000 certification establishes and announces a starting point for an organisation in its quality efforts. The ISO 9000 certification demands a total transformation of the management culture from the traditional system to the practice of a new philosophy – The Total Quality Management, for delivering better quality products and services and thereby meeting customer expectations.

The TQM is a dynamic process involving everyone in the organisation to provide never-ending improvements in the effectiveness and efficiency of all elements of the organisation system. The ISO 9000 certification will provide a foundation and complementary approach to quality by focusing on process documentation and maintenance of records. Also the latest revision of the ISO 9000: 2000 has been strongly TQM oriented.

It is imperative for the ISO 9000 certified organisations to practice TQM principles for delivering better quality products to the customers. ISO 9000 certification provides a responsibility for the organisation to provide better quality products to the customers, since the customers
expect the quality products from the ISO 9000 certified organisations. By practicing TQM principles the ISO 9000 certified organisations are able to work inside-out on a common target of satisfying the customers and delighting the customers.

The benefits of ISO 9000 registration include; marketing advantage, improved utilisation of time and materials, improved efficiency and profitability, increased customer satisfaction, consistent quality and timely delivery, fewer re-analysis of samples, improved performance from suppliers, lower reject rates, rework, and warranty costs. These benefits can be achieved through the practice of TQM principles along with the ISO certification.

The ISO 9000 and TQM practice cannot be considered as independent and separate concepts. These two concepts are intertwined and complement each another. The organisations should not consider the ISO 9000 certification as an end in itself. It is the responsibility of the managements of ISO 9000 certified organisations to ensure the practice of TQM principles after their ISO accreditation.

ISO experienced an explosive growth in membership between 1994 and 2003. The total members increased by nearly 50% (from 100 to 147) contributing to make ISO a truly global organisation (http//www.iso.org). In the same period, ISO’s reach to different categories of stakeholders also increased dramatically, through both national standard bodies network and the extended corporation with a large variety of international organisation, including governmental and non governmental entities. In this context it is worthwhile to Analyse, to what extent the ISO 9000 organisations in the state of Kerala are practicing TQM principles.

In the forthcoming chapter, analysis of the Total Quality Management practice among the ISO 9000 certified manufacturing organisations in Kerala is presented.