

ISO 9000 REGISTRATION FOR ACHIEVING COMPETITIVE EDGE IN WORLD MARKET PLACE

By
Jayanta K. Bandyopadhyay
Central Michigan University

ABSTRACT

In the recent decade, quality of products and services has been the center of focus, and eventually became the order qualifier for doing business in world market place. Of particular relevance to the future of trade in international arena for competitiveness are: (1) *ISO 9000* series of quality standards which is rapidly gaining recognition in European countries, the United States and countries around the world, and (2) the ability of companies around the world, to successfully implementing an ISO 9000 type quality management system.

Introduction

The ISO 9000 series of quality standards is in fact, a set of international documents written by members of a worldwide delegation known as the ISO/Technical Committee (TC) 176 in the year 1987(11). The ISO/TC 176 consists of three standards committees and several working groups. Originally, five national associations participate in the ISO/TC 176 as convenors of subcommittees, they are: AFNOR (Association Francaise de Normalization), ANSI (American National Standards Institute), BSI (British Standards Institute), NNI (Nederlands Normalisatie Institute), and SCC (Standards Council of Canada). Other member countries are also represented by their respective national standards bodies. Although they were the first international quality related standards published by ISO, they broke new ground and many nations approved them instantly. Thus, they became the standard for doing business in the world market place, where the purchasers would write contracts requiring their suppliers to meet the provisions of ISO 9000 (17). In 1987, the United States adopted ISO 9000 series of standards as ASQC's Q90 series of standards using American terminology, the United Kingdom also adopted the same standards as BS 5750, while the European countries adopted the ISO standards as EN 29000-29004(18). Many other countries have also endorsed the same standards under various designations. Thus, the ISO quality standards have already received worldwide recognition and support(12).

The Department of Defense (DOD) of the US prompted by North Atlantic Treaty Organization (NATO), decided in August 1989 to adopt the ISO Standards(12). Although the DOD of the US may replace its MIL-Q-9858A and MIL-I-45028A with the ISO 9001 standard, it has not yet required its supplier to be registered to the ISO 9001. Nonetheless, for DOD suppliers the ISO certification will no doubt be a great competitive edge(11).Of particular interest to the US aerospace industry is the fact that in early 1990s the Society of British Aerospace Companies, Inc. (SBAC), has already launched an ISO 9000 registration scheme for the United Kingdom Aviation Industry. Similarly, members of the US commercial aviation industry should know that the European aviation regulatory system Europe's Joint Aviation Regulation (JAA) does recognize the ISO standards(12)..Many other industries including the pharmaceutical, electronic, telecommunications, construction, petroleum and related industries across the world will sooner or later be affected by the ISO standards. Considering these developments a company should seriously attempt to achieve ISO certification, particularly, if the company wants to export to one or more of the twelve member countries of the European Economic Community (EEC) or to a member of the European Free Trade Association (EFTA) (membership of which includes:

Norway, Sweden, Iceland, Switzerland, Liechtenstein, Finland, Austria and many East European countries plan to join the membership within the next five to ten years)., Also, if any of its customers export to the EEC, EFTA or supply the DOD, it may be required ISO registration by its customer(12). This is often referred to as the cascading effect whereby customers request certification of their suppliers who in turn request it of their suppliers and so on down the line.. Similarly, many companies in Asia, Argentina, Brazil, Canada, Australia, and Mexico are also currently achieving ISO registration for competing in the world market place(12)

.

ISO 9000 architecture

The ISO 9000 series of quality standards consists of the following five documents: among which three are core quality system documents known as quality assurance models , namely 9001, 9002 and 9003 and the other two are supporting guidelines documents, 9000 and 9004. (9,12).
ISO 9000 *Quality Management and Quality Assurance Standards: (Guidelines for Selection and Use):*.This document set forth the principle quality concepts, describes how these standards can be applied within purchaser/supplier contracts, and provides guidance for the use of the other following four standards.

ISO 9001 *Quality Systems Model for Quality Assurance in Design, Development, Production, Installation, and Servicing.* This model is appropriate in situations where contract requires the supplier to develop, design, produce, install, service, and supply a product or service. The requirements for the other two standards

ISO 9002 *Quality Systems Model for Quality Assurance in Production and Installation.* This model is applicable in situations where the contract requires the supplier to produce and supply according to an existing design or customer supplied design document.

ISO 9003 *Quality Systems Model for Quality Assurance in Final Inspection and Testing:* This model applies to the situation where the contract requires the supplier to supply based upon final inspection and testing.

ISO 9004 *Quality Management and Quality System Elements Guidelines*: This is a guideline for internal quality management activities. This includes a set of guidelines which a company can utilize for developing its internal quality system

Choosing the ISO Model (9001, 9002 or 9003) for Registration

A company must decide, unless otherwise dictated by its customers, which model of quality assurance (9001, 9002, or 9003) best meets its needs. Table 1.1 .summarizes the commonality of various sections among three models of ISO 9000 series. It clearly shows that ISO 9003 is a subset of ISO 9002 which in turn is a subset of ISO 9001. The most detailed model for quality assurance is ISO 9001 which consists of twenty elements or sections. The ISO 9002 standards consists of only eighteen sections, whereas ISO 9003 only has only twelve sections(4, 5 In some cases, the decision is made by asking simple questions such as: "Are we involved with Design and Development?" If the answer is "yes"," then choice would be ISO 9001. If the answer

Table 1. Cross-reference List of ISO 9000 Quality System Elements

DESCRIPTION OF ELEMENT	CORRESPONDING SECTION IN ISO			
	9001	**9002**	**9003**	**9004**
Management Responsibility	4.1	4.1a	4.1b	4
Quality System Principles	4.2	4.2	4.2a	5
Contract Review	4.3	4.3	NA	7
Design Control	4.4	NA	NA	8
Document Control	4.5	4.4	4.3a	17
Purchasing	4.6	4.5	NA	9
Purchaser Supplier Product	4.7	4.6	NA	---
Product Identification & Traceability	4.8	4.7	4.4a	11.2
Control of Production Processes	4.9	4.8	NA	10,11
Inspection and Testing 12	4.10	4.9	4.5a	
Inspection, Measuring and Test Equip.	4.11	4.10	4.6a	13
Inspection and Test Status	4.12	4.11	4.7a	11.7
Control of Nonconforming Product	4.13	4.12	4.8a	14
Corrective Action	4.14	4.13	NA	15
Handling, Storage, Packaging and Delivery	4.15	4.14	4.9a	16
Quality Records	4.16	4.15	4.10a	17.3
Internal Audits 5.4	4.17	4.16a	NA	
Training	4.18	4.17a	4.1b	18
After-sales Servicing	4.19	NA	NA	16.2
Statistical Techniques	4.20	4.18	4.12a	20

a - Less stringent than 9001, b - Less stringent than 9002, NA - Element not applicable

is "no," then " are we producing from the customer supplied design? If the answer is "yes", then choice would be ISO 9002. If the answer is "no", then "Are we performing inspection and testing on customer supplied products?". If the answer is "yes", then, choice would be ISO 9003

ISO 9000 registration

The conformance to ISO 9000 series of standards is generally verified by third party audit by a customer approved ISO 9000 registrar[14]. ISO 9000 third party registrars are independent companies who are accredited by a national accreditation body to verify compliance with ISO 9000 standards and maintain a register of names of the companies who have achieved ISO 9000 registration through them. Accreditation body for registrar is either chartered or appointed by the government of the country where it is located. For example, in the United Kingdom, all registrars must be accredited by the National Accreditation Council for Certification Bodies (NACCB) which must issue certificates with the Crown Stamp of the NACCB. The accreditation body in The Netherlands is Raad voor de Certificatie (RvC). Similarly, most European countries has their own accreditation body [10]. In December 1991 American National Standard Institute (ANSI)

and American Society for Quality Control jointly set up the Registration Accreditation Board (RAB) for accrediting American registrars of quality systems according to European Norm (EN) 45000 series of standards which govern all conformity assessment activities. When choosing a registrar, it is also important to find out whether its ISO registration certificate is recognized by the customers [6].

Opportunity to Improve With ISO 9000

It is true that as of late 1991 ISO certification had not been used as an entry barrier to the European market. However, it should be noted that some US multinationals have already been told by a few of their major European customers that they could not be included on their list of preferred suppliers unless they were registered to one of the ISO standards. Faced with such contractual requirements, and for the sake of practical expediency some firms in Europe and in the US have been hiring a consulting firm to help guide them towards ISO 9000 registration process.. Others see the ISO 9000 series as a wonderful opportunity to adopt their Total Quality Management (TQM) policy.

Conclusion

It is important to note that the ISO 9000 series of standards is not a European standard, it is an International standard(1).. It is an international standard for the implementation and management of a quality assurance system. Also, it is not a technical document, but rather a generic document intended to apply to all industries(19).Visionaries speak of ways in which the various ISO models can help a company reduce internal cost and/or increase efficiency. They even speak of the ISO series as an opportunity to develop a Total Quality Management (TQM) philosophy, and some even prefer to refer to the ISO series as a *quality management philosophy* and refuse to use it as a quality assurance system. ISO 9001, 9002 and 9003 are in fact, models for quality assurance. Whereas the non-contractual ones(particularly 9000/Q90 and 9004/Q94), are guidelines and include many principles of total quality, as preached by Feigenbaum, Ishikawa and others..

The ISO series may not be used for a mere registration procedure but as a golden opportunity to implement a long awaited total quality management philosophy. Experience indicated that companies attempting to append a total quality management (TQM) program on top of an ISO implementation process can run a greater risk of stressing the process to the point of break. This is not because the two processes (TQM and ISO) are incompatible but rather because, for a variety of reasons, most individuals or companies do not allocate enough time to carefully plan for smoothly integrating them. In fact, most companies who have successfully implemented an ISO 9000 quality assurance system have found out that the ISO implementation efforts, in fact, lead to a long process of team efforts, shared commitment and improved communication which undoubtedly led to the very basic foundation of total quality management.

REFERENCES

1. W.H. Boehling, "Europe 1992: Its Effect on International Standards," *Quality Progress,* June 1,1990 pp. 29, -32 .
2. M. L. Dertouzos, R. K. Lester and R. M. Solow. *Made in America, ,* MIT Press, 1990.
3. J. P. Graham, Texas Petrochemical plant gets certification," *The Oil & Gas Journal,* May, 1991.
4. International Standard ISO 10011-1. Guidelines for auditing quality systems. Part 1: Auditing
5. ISO 10011-2 1991-05-01. Guidelines for auditing quality systems— Part 2: Qualification criteria for quality systems auditors.
6. ISO 10011-3 1991-05-01. Guidelines for auditing quality systems— Part 3: Management of audit programs.
7. R. N. Kacker. "Quality Planning for the Service Industries," *Quality Progress,* August ,1988 pp. 39.
8. Carol A. King. "A Framework for a Service Quality Assurance System," *Quality Progress,* September 1987, pp. 27-32.
9. James Lamprecht, "Demystifying the ISO 9000 Series Standards, *Quality Engineering,* Volume IV, no. 2, 1992.
10. James Lamprecht, "The ISO Certification Process: Some Important Issues to Consider," in *Quality Digest,* August, 1991.
11. James Lamprecht, "ISO 9000: Strategies for the 1990s," in *Quality Magazine,* November, 1991.
12. Donald Marquardt et al., 'Vision 2000: The Strategy for the ISO 9000 Series Standards in the ' 90's," *Quality Progress,* May 1991, pp. 25-31.
13. Charles A. Mills, *The Quality Audit: A Management Evaluation Tool,* ASQC publication 1989.
David J. Morrow, "Be Good Or," *International Business,* July 1991, pp. 24- 28.
15. Michael E. Porter. *The Competitive Advantage of Nations,* Free Press, 1990.
16. Gene Schindler and James Lamprecht, "The Significance of the International Standards Organization ISO 9000 Series for the Drilling and Production Related Businesses," *The Oil and Gas Journal,* May 6, 1991
17. Walter Willborn. *Audit Standards: A Comparative Analysis,* ASQC publication, 1987.

From:

Dr. Jayanta Bandyopadhyay, **Fax:, 001-517 774-2372**

Management and Law Department

Central Michigan University

Grawn Hall 204D

Mt. Pleasant, MI 48859

To

Dr. A.V. Shanmugam **Fax: 9 011 91 82 122559** January 28, 1998

Director and General Chair - GLOCOSM

Institute for Management Development

2254 Vinoba Road

Mysore 570005

INDIA

RE: SEMINAR IN TQM, ISO9000, QS9000 STANDARDS

Dear Dr. Shanmugam,

In December of 1995, I presented a paper on ISO9000 at the GLOCOSM Conference at Bangalore, India, where we met. There you invited me to visit your Institute for Management Development at my next visit to India. I am very glad to inform you that my University has approved my sabbatical leave during the Winter semister of 1999 when I plan to visit my home town, Calcutta, India. I am planning to visit Calcutta by the last week of January , 1999. I would very much like to visit your institute and offer a 2-3 weeks seminar or workshop on Total Quality Management (TQM) or Quality Auditing by ISO9000/ QS-9000 Standards. All I expect the reimbursement of my round trip travel expenses from Calcutta to Mysore and room and board in hotel or your campus guest house and any emergency medical care expenses for myself and for my wife for those days of lecturing in your institute, I am a certified Quality Auditor (IQA) by International Institute of Quality Assurance, London, and by Registrar Board of Accreditation of USA. If my proposal interest you, or if you have any alternative proposal please do not hesitate write to me. I am enclosing a copy of my biodata for your review.
Thanking you,

Sincerely,

Jayanta Bandyopadhyay, Professor

From:

Dr. Jayanta Bandyopadhyay, **Fax: 001517-774-2372**

Management and Law Department

Central Michigan University

Grawn Hall 204D

Mt. Pleasant, MI 48859

Dr. Murti, Director

Indian Institute of Management

Bangalore, India

January 28, 1998

Dear Dr. Murti,

In December of 1995, I presented a paper on ISO9000 at the GLOCOSM Conference at Bangalore, India, where we met. There you invited me to visit your Institute for Management Development at my next visit to India. I am very glad to inform you that my University has approved my sabbatical leave during the Winter semister of 1999 when I plan to visit my home town, Calcutta, India. I am planning to visit Calcutta by the last week of January , 1999. I would very much like to visit your institute and offer a 2-3 weeks seminar or workshop on Total Quality Management (TQM) or Quality Auditing by ISO9000/ QS-9000 Standards. All I expect the reimbursement of my round trip travel expenses from Calcutta to Mysore and room and board in hotel or your campus guest house and any emergency medical care expenses for myself and for my wife for those days of lecturing in your institute, I am a certified Quality Auditor (IQA) by International Institute of Quality Assurance, London, and by Registrar Board of Accreditation of USA. If my proposal interest you, or if you have any alternative proposal please do not hesitate write to me. I am enclosing a copy of my biodata for your review

Thanking you,

Sincerely,

Jayanta Bandyopadhyay, Professor

From:

Dr. Jayanta Bandyopadhyay, **Fax: 001517-774-2372**

Management and Law Department

Central Michigan University

Grawn Hall 204D

Mt. Pleasant, MI 48859

Dear Dr. Murti,

In December of 1995, I presented a paper on ISO9000 at the GLOCOSM Conference at Bangalore, India, where we met. There you invited me to visit your Institute for Management

Development at my next visit to India. I am very glad to inform you that my University has approved my sabbatical leave during the Winter semister of 1999 when I plan to visit my home town, Calcutta, India. I am planning to visit Calcutta by the last week of January , 1999. I would very much like to visit your institute and offer a 2-3 weeks seminar or workshop on Total Quality Management (TQM) or Quality Auditing by ISO9000/ QS-9000 Standards. All I expect the reimbursement of my round trip travel expenses from Calcutta to Mysore and room and board in hotel or your campus guest house and any emergency medical care expenses for myself and for my wife for those days of lecturing in your institute, I am a certified Quality Auditor (IQA) by International Institute of Quality Assurance, London, and by Registrar Board of Accreditation of USA. If my proposal interest you, or if you have any alternative proposal please do not hesitate write to me. I am enclosing a copy of my biodata for your review

Thanking you,

Sincerely,

Jayanta Bandyopadhyay, Professor