



INDUSTRY'S GUIDE TO ISO 9000

DEDEJI B. BADIRU

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DUNDAR F. KOCAOGLU, SERIES EDITOR

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ADEDEJI BODUNDE BADIRU



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Thamhain/ENGINEERING MANAGEMENT: MANAGING EFFECTIVELY IN TECHNOLOGY-BASED ORGANIZATIONS

To my wife, Iswat, whose love sustains me in everything that I do.

PREFACE

Quality is a universal language. The existence of standards helps to achieve consistent levels of product quality. The emergence of ISO 9000 has created the need to refocus the way companies operate. Customers and consumers are so sophisticated now that they will no longer simply accept whatever is offered in the market. In the past, consumers were expected to make do with the inherent quality of the available product, no matter how poor it was. This has changed drastically in the past few years. For a product to satisfy the sophisticated taste of the modern consumer, it must exhibit a high level of quality. Only high-quality products and services can survive the prevailing market competition.

This book presents practical guidelines for pursuing the requirements of ISO 9000. This book is not about the standards themselves, but rather about the process needed to comply with the standards. The primary audience for the book consists of practitioners in all functional areas of business and industry. Examples of the relevant functional areas include industrial and systems engineers, process engineers, designers, R & D managers, plant managers, production supervisors, manufacturing engineers, and quality engineers. The book should also appeal to academic institutions and professional training organizations as a reference material.

The book also considers the human aspects of pursuing ISO 9000. Regardless of the technical capabilities of the production machinery of a company, it is people that will make the quality goals of a company realizable. The book is written in a concise and clear language suitable for easy reference. Guidelines are presented for the various aspects of ISO 9000 and

the organizational processes required. The project management guidelines presented in Chapters Five and Six are essential for successfully carrying out the planning, organizing, scheduling, and control functions that support the ISO 9000 process.

ISO 9000 deals mostly with people-related issues, rather than technical systems. The usual process, if not managed well, can be so arduous that people are just glad when it is over. But the truth is, it should never be over. It should be an ongoing process. Maintaining what has been achieved is as important as achieving it in the first place.

Thus, the unique aspect of this book is the use of project management techniques to manage the ISO 9000 process. With proper management, even an arduous task can become pleasant. It is recommended that the entire book be read so that specific topics and tools of interest can be extracted and organized into a custom certification plan to satisfy the needs of the organization.

ADEDEJI BODUNDE BADIRU

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GLOBAL QUALITY PERSPECTIVES

Quality is a topic of interest throughout the present global market. As the market environment shrinks because of advancements in transportation and communication technologies, the need for rapid response to global developments becomes more critical. Price used to be the common basis on which product negotiations were consummated. In the new global market, product characteristics, expressed in quality terms, will be a major basis for such market negotiations. Manufacturers, retailers, distributors, vendors, and consumers will all need to have a common understanding of what constitutes acceptable product quality.

The striving for better quality worldwide has led to the need for unified international quality standards. The International Organization for Standardization (IOS) located in Geneva, Switzerland, has developed general quality guidelines known as ISO 9000. The IOS is a special international agency for standardization composed of the national standards organizations from several countries. The organization is also known as the International Standards Organization (ISO). The term ISO is more widely used than the term IOS.

The purpose of this book is not to present the specific details of the ISO 9000 standards themselves, but rather to present guidelines for successfully carrying out the ISO 9000 process. The documents containing the standards can be obtained directly from the standards bodies. Appendix A lists the potential sources of the standards documents.

GLOBAL COMPETITION

Political and economic changes now sweeping the world will significantly affect how and when products exchange hands in a globally competitive market. The quality of product will be a common basis for trade communication. Companies and countries must prepare for the following:

- Transition of some countries from being trade allies to being trade competitors.
- Reduction of production cycle time to keep up with the multilateral introduction of products around the world.
- Increased efforts to cope with the reduction in the life span of products.
- Increased responsiveness to the needs of a mixed workforce.
- Problems associated with overlapping cultural barriers.
- Increased need for multinational communication and cooperation.
- Need for multicompany and multiproduct coordination.
- Disappearance of trade boundaries.

DEFINITIONS OF QUALITY

Quality is often defined as a measure of customer satisfaction. Quality can be defined from the producer's point of view or the customer's point of view. However, to achieve its intended functions, a product must provide a balanced level of satisfaction to both the producer and the customer. For that purpose, a comprehensive definition of quality is required (Badiru and Ayeni 1993):

Quality refers to an equilibrium level of functionality possessed by a product or service based on the producer's capability and the customer's needs.

Quality refers to the combination of characteristics of a product, process, or service that determines the product's ability to satisfy specific needs. The attainment of quality in a product is the responsibility of every employee in an organization. The production and preservation of quality should be a commitment that stretches from the producer to the customer. Products that are designed to have high quality cannot maintain the inherent quality at the user's end of the spectrum if the product is not used properly.

The functional usage of a product should match the functional specifications for the product within the prevailing usage environment. The ultimate judge of the quality of a product is the perception of the user. A product that is perceived as being of high quality for one purpose at a given time frame

may not be seen as having acceptable quality for another purpose in another time frame. We can summarize quality rules as follows:

1. Quality is a product's ability to conform to specifications.
2. Specifications are a representation of customers' needs.
3. Quality begins at design.

THE NEED FOR STANDARDS

Standards provide a common basis for global commerce. Without standards, product compatibility, customer satisfaction, and production efficiency cannot be achieved. Just as quality cannot be achieved overnight, compliance with standards cannot be accomplished instantaneously. The process must be developed and incorporated into regular operating procedures over a period of time. Standards define the critical elements that must be taken into consideration to produce a high-quality product. Each organization must then develop the best strategy to address the elements.

Both *regulatory* and *consensus* standards must be taken into account when pursuing ISO 9000 requirements. Regulatory standards refer to standards that are imposed by a governing body, such as a government agency. All firms within the jurisdiction of the agency are required to comply with the prevailing regulatory standards. Consensus standards refer to a general and mutual agreement among a collection of companies to abide by a set of self-imposed standards. There may also be *contractual* standards that are imposed by the customer based on case-by-case or order-by-order needs. Most international standards will fall in the consensus category. Lack of international agreement often leads to trade barriers by nations, industries, and special interest groups.

INTERNATIONAL STANDARDS

Standards provide a basis for international conformance. Companies that expect to compete in the international market must comply with the prevailing standards. Many international standards have evolved in recent years as a direct response to new global market interactions. Although each country may have its own standards, there are worldwide standards that are uniformly applicable to all market participants. Difficulties in keeping up with the various national regulations and restrictions have led to calls for the standardization of standards.

Instead of having individual European standards, American standards,