ISO 9000

The ISO 9000 family of standards relates to quality management systems and is designed to help organizations ensure they meet the needs of customers and other stakeholders. The standards are published by ISO, the International Organization for Standardization, and available through National standards bodies. ISO 9000 deals with the fundamentals of quality management systems including the eight management principles on which the family of standards is based. ISO 9001 deals with the requirements that organizations wishing to meet the standard have to fulfill.

Who Created the Standards?

- International Organization for Standardization - Geneva
- ISO tech committee - TC 176 started in 1979
- Standards created in 1987
    - To eliminate country to country differences
    - To eliminate terminology confusion
    - To increase quality awareness

How did ISO get started?

- 1906 - International Electro-technical Commission
- 1926 - International Federation of the National Standardizing Associations (ISA)
- 1946 London - delegates from 25 countries decided to create a new international organization "the object of which would be to facilitate the international coordination and unification of industrial standards
- 1947 - ISO began to officially function
- 1951 - The first ISO standard was published

Elements of the Standards

- Management responsibility
- Resource management
- Quality System
- Contract Review

- Design Control
- Document Control
- Purchasing
- Purchaser-Supplied Product
- Product Identification and Traceability
- Process Control
- Inspection and Testing
- Inspection, Measuring and Test Equipment
- Inspection and Test Status
- Control of Non-conforming product
- Corrective Action
- Quality Records
- Internal Quality Audit
- Training
- Servicing
- Statistical Techniques

Element Standard: Management Responsibility:

- Management must have a written policy statement of their commitment to quality. This policy must be communicated to and understood by all employees.
- Management must clearly define quality-related organizational responsibilities and interrelationships.
- A management representative must be assigned to oversee the implementation and continuous improvement of the quality system.
- Senior management must continually review the system.

Element Standard: Process Control:

The company must identify all processes that directly affect the quality of the product or service and ensure that these processes are carried out under controlled conditions, including:

- Formal approval of process design and equipment.
- Documented work instructions.
- Development of quality plans describing how the process is to be monitored.
- A suitable working environment.
- Documented quality criteria.

Why adopt ISO 9000?

- To comply with customers who require ISO 9000
- To sell in the European Union market
- To compete in domestic markets
- To improve the quality system
- To minimize repetitive auditing by similar and different customers
- To improve subcontractors' performance

Quality Management Principles by ISO

The following text introduces the eight quality management principles on which the quality management system standards of the revised ISO 9000:2000 series are based. These principles can be used by senior management as a framework to guide their organizations towards knowledge of the international experts who participate in ISO Technical Committee ISO/TC 176, Quality management and quality assurance, which is responsible for developing and maintaining the ISO 9000 standards.

1. Customer focus

Organizations depend on their customers and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations.

Key benefits:

- Increased revenue and market share obtained through flexible and fast responses to market opportunities.
- Increased effectiveness in the use of the organization's resources to enhance customer satisfaction.
- Improved customer loyalty leading to repeat business.

Applying the principle of customer focus typically leads to:

- Researching and understanding customer needs and expectations.
- Ensuring that the objectives of the organization are linked to customer needs and expectations.
- Communicating customer needs and expectations throughout the organization.
- Measuring customer satisfaction and acting on the results.
- Systematically managing customer relationships.
- Ensuring a balanced approach between satisfying customers and other interested parties (such as owners, employees, suppliers, financiers, local communities and society as a whole).

2. Leadership

Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.

Key benefits:

- People will understand and be motivated towards the organization's goals and objectives.
- Activities are evaluated, aligned and implemented in a unified way.
- Miscommunication between levels of an organization will be minimized.

Applying the principle of leadership typically leads to:

- Considering the needs of all interested parties including customers, owners, employees, suppliers, financiers, local communities and society as a whole.
- Establishing a clear vision of the organization's future.
- Setting challenging goals and targets.
- Creating and sustaining shared values, fairness and ethical role models at all levels of the organization.
- Establishing trust and eliminating fear.
- Providing people with the required resources, training and freedom to act with responsibility and accountability.
- Inspiring, encouraging and recognizing people's contributions.

3. Involvement of people

People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization’s benefit.

Key benefits:

- Motivated, committed and involved people within the organization.
- Innovation and creativity in furthering the organization's objectives.
- People being accountable for their own performance.
- People eager to participate in and contribute to continual improvement.

Applying the principle of involvement of people typically leads to:

- People understanding the importance of their contribution and role in the organization.
- People identifying constraints to their performance.
- People accepting ownership of problems and their responsibility for solving them.
- People evaluating their performance against their personal goals and objectives.
- People actively seeking opportunities to enhance their competence, knowledge and experience.
- People freely sharing knowledge and experience.
- People openly discussing problems and issues.

4. Process approach

A desired result is achieved more efficiently when activities and related resources are managed as a process.

Key benefits:

- Lower costs and shorter cycle times through effective use of resources.
- Improved, consistent and predictable results.
- Focused and prioritized improvement opportunities.

Applying the principle of process approach typically leads to:

- Systematically defining the activities necessary to obtain a desired result.
- Establishing clear responsibility and accountability for managing key activities.
- Analyzing and measuring of the capability of key activities.
- Identifying the interfaces of key activities within and between the functions of the organization.

- Focusing on the factors such as resources, methods, and materials that will improve key activities of the organization.
- Evaluating risks, consequences and impacts of activities on customers, suppliers and other interested parties.

5. **System approach to management**

Identifying, understanding and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives.

Key benefits:

- Integration and alignment of the processes that will best achieve the desired results.
- Ability to focus effort on the key processes.
- Providing confidence to interested parties as to the consistency, effectiveness and efficiency of the organization.

Applying the principle of system approach to management typically leads to:

- Structuring a system to achieve the organization's objectives in the most effective and efficient way.
- Understanding the interdependencies between the processes of the system.
- Structured approaches that harmonize and integrate processes.
- Providing a better understanding of the roles and responsibilities necessary for achieving common objectives and thereby reducing cross-functional barriers.
- Understanding organizational capabilities and establishing resource constraints prior to action.
- Targeting and defining how specific activities within a system should operate.
- Continually improving the system through measurement and evaluation.

6. **Continual improvement**

Continual improvement of the organization's overall performance should be a permanent objective of the organization.

Key benefits:

- Performance advantage through improved organizational capabilities.

- Alignment of improvement activities at all levels to an organization's strategic intent.
- Flexibility to react quickly to opportunities.

Applying the principle of continual improvement typically leads to:

- Employing a consistent organization-wide approach to continual improvement of the organization's performance.
- Providing people with training in the methods and tools of continual improvement.
- Making continual improvement of products, processes and systems an objective for every individual in the organization.
- Establishing goals to guide, and measures to track, continual improvement.
- Recognizing and acknowledging improvements.

7. Factual approach to decision making

Effective decisions are based on the analysis of data and information

Key benefits:

- Informed decisions.
- An increased ability to demonstrate the effectiveness of past decisions through reference to factual records.
- Increased ability to review, challenge and change opinions and decisions.

Applying the principle of factual approach to decision making typically leads to:

- Ensuring that data and information are sufficiently accurate and reliable.
- Making data accessible to those who need it.
- Analyzing data and information using valid methods.
- Making decisions and taking action based on factual analysis, balanced with experience and intuition.

8. Mutually beneficial supplier relationships

An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value

Key benefits:

- Increased ability to create value for both parties.
- Flexibility and speed of joint responses to changing market or customer needs and expectations.
- Optimization of costs and resources.

Applying the principles of mutually beneficial supplier rel. typically leads to:

- Establishing relationships that balance short-term gains with long-term considerations.
- Pooling of expertise and resources with partners.
- Identifying and selecting key suppliers.
- Clear and open communication.
- Sharing information and future plans.
- Establishing joint development and improvement activities.
- Inspiring, encouraging and recognizing improvements and achievements by suppliers.

Auditing Process

Two types of auditing are required to become registered to the standard: auditing by an external certification body (external audit) and audits by internal staff trained for this process (internal audits). The aim is a continual process of review and assessment to verify that the system is working as it is supposed to; to find out where it can improve; and to correct or prevent problems identified. It is considered healthier for internal auditors to audit outside their usual management line, so as to bring a degree of independence to their judgments.

Under the 1994 standard, the auditing process could be adequately addressed by performing "compliance auditing":

- Tell me what you do (describe the business process)
- Show me where it says that (reference the procedure manuals)
- Prove that this is what happened (exhibit evidence in documented records)

The 2000 standard uses a different approach. Auditors are expected to go beyond mere auditing for rote compliance by focusing on risk, status, and importance. This means they are expected to make more judgments on what is effective, rather than merely adhering to what is formally prescribed. The difference from the previous standard can be explained thus:

Under the 1994 version, the question was broad: "Are you doing what the manual says you should be doing?", whereas under the 2000 version, the questions are more specific: "Will this process help you achieve your stated objectives? Is it a good process or is there a way to do it better?"

Activity-based management (ABM)

It is a method of identifying and evaluating activities that a business performs using activity-based costing to carry out a value chain analysis or a re-engineering initiative to improve strategic and operational decisions in an organization. Activity-based costing establishes relationships between overhead costs and activities so that overhead costs can be more precisely allocated to products, services, or customer segments. Activity-based management focuses on managing activities to reduce costs and improve customer value.

Cost and effect: Using integrated cost systems to drive profitability and performance. Boston: Harvard Business School Press.) Divide ABM into operational and strategic:

Operational ABM is about "doing things right", using ABC information to improve efficiency. Those activities which add value to the product can be identified and improved. Activities that don't add value are the ones that need to be reduced to cut costs without reducing product value.

Strategic ABM is about "doing the right things", using ABC information to decide which products to develop and which activities to use. This can also be used for customer profitability analysis, identifying which customers are the most profitable and focusing on them more.

Risks Associated with ABM

A risk with ABM is that some activities have an implicit value, not necessarily reflected in a financial value added to any product. For instance a particularly pleasant workplace can help attract and retain the best staff, but may not be identified as adding value in operational ABM. A customer that represents a loss based on committed activities, but that opens up leads in a new market, may be identified as a low value customer by a strategic ABM process.

Managers should interpret these values and use ABM as a "common, yet neutral, ground … this provides the basis for negotiation". ABM can give middle managers an understanding of costs to other teams to help them make decisions that benefit the whole organization, not just their activities' bottom line.