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RESEARCH ARTICLE
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THE BENEFITS OF AN ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) AND REGISTRATION OF THE EMS TO ISO 14000 AND FUNDAMENTALS OF QUALITY MANAGEMENT SYSTEM BY ISO 9000

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Abstract
An ISO certification attests to the fact that a manufacturing process, documentation technique, service, or management system satisfies all standardization and quality assurance requirements. The International Organization for Standardization, or ISO, is a global non-governmental organization that operates independently and creates standards to guarantee the effectiveness, safety, and quality of systems, goods, and services. There are ISO certifications in numerous industries, ranging from medical devices and energy management to social responsibility and energy management. The purpose of ISO standards is to guarantee uniformity. Every certification has its own set of requirements and is categorized numerically.

Keywords: ISO, ISO14000, ISO9000, EMS, QMS

Introduction:

Man-made changes in the environment have continued through most historical epochs. However, the last two centuries following the industrial revolution have witnessed accelerated environmental changes due to the exploitation of natural resources on an exceptional scale. Extensive burning of fossil fuels, release of various chemical pollutants into the air, the water and soil, clearing of forests for agriculture and extensive exploitation of all natural resources are now threatening to destroy the very environment on which human existence depends.

With the increase of the competition globally, organizations are pressurized to produce high quality products and continuously improve themselves to sustain in this competitive world and to remain in the competition. As various authors demonstrate (1), the ISO 9001 standards do not mark to the adherence with a given aim or result. In other words, they are not performance standards evaluating the quality of a firm's products or services or a firm's environmental results; rather, they are standards identifying the need to systematize and to adorn a large number of corporate processes

within a set of procedures, and to exhibit such implementation. It must also be kept under consideration that the implementation of this type of standard is a unconstrained one, although in some sectors it has become an inevitable measure, given the perceptive influence of customers (2).

Fortunately, awareness of environmental problems is growing in most countries of the world. It is felt by many people that to continue development patterns that cannot be continued in the long term is a recipe for disaster. Governments are now listening more to the advice of environmentalists and increasingly enacting legislation aiming at protecting the environment from the negative impacts of economic activities. However, the enforcement of environmental legislation is proving to be difficult in most cases.

Aims of ISO-14000.

- Minimize how their operations (processes, etc.) negatively affect the environment.i.e, Cause adverse changes to air, water, or land.
- It is a process for managing company activities that impact the environment.
- Observe with applicable laws, regulations, and other environmentally oriented requirements, and continually improve in the above.
- ISO-14000 is a management system standards developed by the technical committee TC-207.this mainly concentrates on environment management.

ISO 14000 is a group of standards covering the following areas:

- Environmental Management Systems (14001, 14002, 14004)
- Environmental Auditing (14010, 14011, 14012)
- Environmental Labeling (14020, 14021, 14022, 14023, 14024, 14025)
- Life-Cycle Assessment (14040, 14041, 14042, 14043)

The Environmental Management System contains the following elements:

- An environmental policy supported by top management.
- Identification of environmental aspects and significant impacts.
- Identification of legal and other requirements.
- Environmental goals, objectives, and targets that support the policy.
- An environmental management program.
- Definition of roles, responsibilities, and authorities.

- Training and awareness procedures.
- Process for communication of the EMS to all interested parties.
- Document and operational control procedures.
- Procedures for emergency response.
- Procedures for monitoring and measuring operations that can have a significant impact on the environment.

Benefits of Implementing ISO 14000 EMS

Environmental Management Systems (EMS) is the foundation of the ISO 14000 group of international environmental management standards. The benefits of an EMS and registration of the EMS to ISO 14000 are organized into the following categories:

Increased Profits

- Implementing ISO 14001 today can provide a basis for implementing the other standards in the ISO 14000 series. This incremental approach can reduce overall costs to implement ISO 14000 because of lessons learned in each phase.
- The quantity of materials and energy required for manufacturing a product may be reduced, thereby reducing the cost of the product, material handling costs, and waste disposal costs.
- An EMS can help reduce incidents of pollution and the associated expense of recovery.
- Recycling manufacturing waste and unused inputs could increase revenues. Recycling need not be within the same facility, but with another one that can use the waste as input to their production.
- Employee health and safety can be improved, thereby improving productivity, decreasing sick days, and reducing insurable risk.
- Insurance claims may be reduced, thus reducing the costs of coverage and settlements.

Quality management system is tagged as a business management system that it can be applied to all organization of all types and all size of companies. Customer satisfaction, market leadership and profitability are driven in large part by delivering quality products and services. (Kolka, 2009) stated that quality management system is widely accepted worldwide to achieve quality in organizations. Dissimilar countries, industries and governments all had fluctuating quality systems that suppliers had to espouse in order to deliver goods around the world. A single global standard was required to shorten international standards. This presents ISO - the International Organization for Standardization Situated in Switzerland. ISO is the particular international intervention for standardization and the basis of ISO 9000. Established in 1947, it is covered of the national standards bodies of 140 countries, working collectively to produce more than 13,000 International Standards for business, government and society. The goal of ISO is to encourage the development of standardization and related world activities with an opinion to facilitating international exchange of goods and services and to emerging cooperation in the field of intellectual, scientific, technological and economic activity [3-4].

Quality Management System:

ISO-9000

What is ISO

I – International
O – Organization For
S – Standardization

What is ISO 9000: 2000:

It Describes the fundamentals of Quality Management System and Specifies the terminology for Quality Management System

9000 – 90 Countries & 100 acceptable Products Standards
2000 – Year of Publication / Revision

Birth of ISO:
1945 – While Second World War, there was no belief in International Market.
1967 – Realization of the need of Worldwide Global business
1987 – Formation of ISO and release of ISO Standard (Rev No – 00)
1994 –Revision in Original Standard (Rev No. – 01)
2000 – Revision in 2nd edition of 1987

Features of ISO standards:
These are standards of system of production
These are generic standards
These are practical standards
These are not product standards
These ensure consistency of product quality
In this, mistakes are corrected in a systematic way so that chances of repetition are reduced.

Benefits [5-6] that will be derived from Working to ISO 9000-2000:
- Improved communication at all levels
- Decreasing trend in rejections, reworks, customer complaints
- Lead time reduction
- Customer relation improvement.
- Improved health of people.
- Passport to international market
- If Indian industry adopts the ISO-9000 standards, It would enhance foreign exchange and to compete in the international market.
- Higher productivity and economical production
- Quality as a way of life – Highly disciplined
- Best use of resources
- More business – more profit
- Saves time (Effective system which is established is known to all)
- It improves team work
- It saves cost by:

✓ avoiding repetition of work
✓ avoiding unnecessary records
✓ Monitoring processes.

Where and whom can apply for ISO-9000:
All Small Scale, Medium Scale, Large Scale Engineering, Automobile Industries, Service Sectors like Banks, Institutes, Hospitals, Construction, Software industries, Pharmaceutical, Agricultural, Chemical, Electrical, Electronics, Telecommunications, Traders Shop Keepers, Housing Societies etc. Government Sectors.

ISO 9000-1, Quality management and quality assurance standards: Guidelines for selection and use
Establishes a starting point for understanding and selecting the standards appropriate to your needs. Gives you guidance on how to plan, organize and control resources to produce reliable and maintainable products

ISO-9001: Model for Quality Assurance in design/development, production, installation and servicing.

A product or a service has to pass through several stages before it is supplied to the customers. Even after it is supplied to the user, a necessity may arise to keep a follow up action. So that user does not face any problems or difficulties in using the product. ISO-9001 standard gives a model for quality assurance from designing the product and continuing even after the product is delivered to the customer.

ISO-9001 applies to industries that design, produce, install product and provide service after sales as per requirements of the customer. Some specific examples are heat exchangers, coolers, filters, extraction columns….for process industries.

After product is manufactured, and inspected for conformance with specifications it should be installed by the supplier at the customer's premises and trail run should be conducted.

ISO-9002: Model for Quality Assurance in Production, Installation.

Some products require quality assurance only during production and till they are delivered to the customer or installed in his premises. In such cases the manufacturer gives his own design to meet the customer requirements and has to only prove the production process is capable of producing the product as per the requirements of the customer. Civil structures, Construction of bridge etc…are the examples. So the model is applicable where the assurance on quality is required only during production and up to satisfactory installation.

ISO-9003: Model for Quality Assurance in final inspection and test.

Certain products require quality assurance only after they are manufactured i.e. at the time of supply. The customer is not concerned with how they are manufactured. He is interested only in getting the product of desired quality as stated by the supplier. Examples of such cases are: Domestic appliances, petroleum products, components used in the assembly of manufacturer of bigger items such as automobiles etc….Most of the consumer items also fall in this category.

ISO-9004: Quality management and quality system elements Guidelines.

ISO-9001, ISO-9002 and ISO-9003 apply where a contract between supplier and contractor exists. In non-contractual situations companies may adopt ISO-9004 which gives guidelines for quality management.

It is essential to build confidence of the customer that the organization can supply the desired quality of the products or service. The organization has to take several integrated steps in managing all maters which have direct or indirect effect on its image to deliver the products of desired quality. This is not a requirement standard, but provides you with guidelines to implement a quality system to satisfy your customers' and your own organization's needs. This standard provides you with quality management guidelines applicable if you are a producer of processed materials, which are typically provided in bulk. This standard provides you with guidelines for implementing continuous quality improvement within your organization using tools and techniques based on data collection and analysis.

ISO 10005, Quality management– Guidelines for quality plans

This standard gives you guidance on how to prepare quality plans for the control of specific products, projects or contracts.

ISO 10011, Guidelines for auditing quality auditing systems.

The quality system has to be checked form time to time for its proper functioning. It has to be updated or modified to meet the demand of the time. Otherwise the systems will loss this effectiveness or fail to meet the requirements of time.

ISO-10011-1:
Describes the rule of auditors, their responsibilities, the elements of auditing, executing the audit, reporting etc…You can use this standard internally or for auditing your suppliers.

ISO-10011-2: Deals with the qualification criteria for quality system auditors, their capabilities to perform the audit. Provides guidance on the education, training, experience, personal attributes and management capabilities needed to carry out an audit.

ISO-10011-3: Deals with establishment of audit function. Provides basic guidelines for managing quality system audit programmes.

Conclusion:
The well-established net advantages of the ISO 9000 and ISO 14000 programs were discussed in this article under their impacts. Their integration can yield further advantages. But the majority of the research being done now only looks at qualitative data over brief periods of time. To support the advantages of both stand-alone certifications and the combination of the two certifications, further quantitative research over longer time periods is therefore required. In order to ascertain if the improvements in financial performance indicators are attributable solely to ISO certifications or to other political and economic variables, ISO certified organizations must also be compared to noncertified companies.

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