

## UNDERSTANDING THE IMPORTANCE OF THE INTERNATIONAL QUALITY STANDARDS IN THE AUTOMOTIVE INDUSTRY<sup>1</sup>

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### Abstract

In today's fast-moving world of changing technology, it is crucial that designers and engineers in facilities all around the world have a sound knowledge of International Standards. International Standards are among the most important management tools. Standards help an enterprise manage business-critical issues, such as quality, environmental performance and safety. A particular region of the world might have different regulatory standards than another one, but the use of International Standards forces us to judge our operations against the best in the world and steers us toward the use of best practices to accomplish business requirements. International Standards prevent trade restrictions and promote access to global markets.

***Keywords - International Standards; Business-Critical Issues;  
Management Tools; Business Requirements***

### INTRODUCTION

Every organization is under growing pressure to create value for their customers, stakeholders and employees. This pressure continuously calls for better capabilities to innovate, manage risk, improve performance, comply with the regulatory environment, develop talents, enhance customer and supplier relationships and improve sustainability. Reliable management system standards are needed to help meet these diverse challenges and achieve tangible business benefits. The International Standards open doors for company's products worldwide. Every organization should be a global

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player with globally located research, development and production sites. Therefore, they need to observe global standards. These serve to increase work efficiency in their research and development, planning, procurement, production and after-sales operations and simplify the strong cooperation to enjoy with our technology partners. The process of globalization means that uniform, globally recognized standards will become increasingly important. International Standards must be incorporated in national regulations to promote uniform global conditions for the automotive industry. Such a process would continue to strengthen confidence in International Standards. For a worldwide active company, it is extremely important that uniform International Standards are developed quickly and efficiently. International Standards prevent trade restrictions and promote access to global markets. National and regional standards result in increased expense within the automotive industry, and often lead to incompatible stand-alone solutions. For ISO, it is a unique opportunity to integrate activities and develop standards that can be applied around the world. Only common standards, e.g. ISO with IEC, SAE and SAC, help the industry and create uniform worldwide general conditions. This will provide the groundwork for a definitive breakthrough for the mobility of the future. Quality isn't just about profits and loss or beating out a competitor. It's about safety, delivering on a promise and meeting the very basics of customer expectations. But, by meeting quality standards, companies often reap better profits and reduce losses. Those that exceed quality standards stand out above their competitors and further their potential for profit and consumer loyalty.

#### METHODS

Nearly 1,000 ISO standards have been developed for the automotive industry covering all aspects: safety, ergonomics, performance, test methods, the environment, and the roll-out of innovative technologies. A few highlights are the following: Ergonomic aspects; ISOFIX - attachment system for connecting the child car seat to the vehicle; Diagnostic communication over Internet Protocol (DOIP); Diagnostic communication over Controller Area Network (DoCAN); Brake lining friction materials; Communications access for land mobiles (CALM); Driver's eye location; Symbols for controls, indicators and tell-tales; Electronic registration identification (ERI); ITS service and multimedia provision in vehicles; Pedestrian protection – impact test methods; Electrically propelled road vehicles; Adaptive cruise control systems; etc. The methodology to achieve customer's satisfaction is through the implementation of an active quality management system (QMS) based on ISO 9001. It ensures the quality of processes and procedures and their continual improvement within the

organization. This is necessary to fulfil the claim to be a premium manufacturer. Therefore, the QMS is a core element of the corporate processes. The QMS needs to be structured in accordance to Quality standards, such as ISO/TS 16949, ISO 14001, ISO 26000 and ISO 50001, which serve as a framework for businesses. Clearly defined standards and requirements make it easier for companies to meet what their consumers consider “quality” and they improve the overall vision of what the company should work toward.

The ISO/TS 16949 standard is a worldwide standard developed by the International Automotive Task Force (IATF), a group of the world’s leading manufacturers and trade organizations. *It defines the quality management system (QMS) requirements for the design, development, production, and when relevant, installation and service of automotive-related products.* ISO/TS 16949 brings together under one standard the quality management principles of ISO 9001 with aspects of various regional and national automotive standards such as AVSQ (Italy), EAQF (France), VDA6 (Germany) and QS-9000 (USA). The ISO/TS 16949 standard defines manufacturing as the process of making or fabricating production materials, production or service parts, assemblies or heat treating, welding and painting. Automotive is understood to include Passenger Cars, Light Commercial Vehicles, Heavy Trucks, Buses and Motorcycles; but exclude Industrial, Agricultural and Off-Highway (Mining, Forestry, Construction) vehicles. An environmental management system is a set of management procedures and processes created to allow organizations the ability to analyse, control, and reduce the environmental impact of its operations and services. The EMS can be used as a tool to help an organization achieve cost savings, streamline regulatory compliance, and achieve greater overall oversight and efficiency. ISO 14001 is a voluntary *international environmental standard* created by the International Organization for Standardization meant to meet the needs of both the private sector and government organization as well as to monitor their environmental performance and impacts on finite and natural resources such as air, water, soil, and raw materials. The ISO 14001 standard requires companies to identify “environmental aspects” and the “environmental impacts” they cause by analysing the process flow of their facilities. Aspects may include air emissions, wastewater effluents, solid wastes, the potential for spills, energy and resource consumption. Environmental impacts may include air pollution, groundwater or soil contamination, resource depletion, habitat destruction and nuisances (e.g. noise, vibration and odour). ISO 26000 standards provide *guidance to corporate social responsibility* among interest groups and encourage the implementation of best practices of

corporate social responsibility. International Standard ISO 26000 provides guidelines on principles to integrate social responsibility in terms of strategies, systems and processes and it can be used by all types of organizations. Furthermore, it is the need to strengthen CSR management in areas related to the company's main strategic goals. Social Responsibility Charter is not just a declaration, it is part of management philosophy and vision, which is the core of global operations. Very important goal is the recognized need for ISO 26000 at an early stage and its involvement from the very start. These standards create the conditions under which industrial companies can operate. They demonstrate the industry's willingness to interact responsibly with its environment and provide a sustainable benefit to the company. Therefore, both ISO 26000 and ISO 50001, should be integral elements of every corporate strategy. The social responsibility aspects form the basis for corporate actions and are monitored by Corporate's Sustainability Board worldwide. ISO 50001 - *Energy management systems Requirements with guidance for use*, is a new voluntary International Standard that establishes a framework for large and small industrial plants and commercial, institutional and government facilities to improve the way they manage energy. Improved energy performance can provide rapid benefits for an organization by maximizing the use of its energy resources and energy-related assets, thus reducing both energy cost and consumption. With more than a billion estimated road vehicles in use worldwide, it is the automotive sector that uses state-of-the-art standards. The challenge has always been, therefore, to bring the famous plant up to the standards of the 21st century automobile manufacturing.

## RESULTS

There are many benefits for the industries that implement these ISO standards and maintain the ISO focus. Clearly defined standards and requirements make it easier for companies to meet what their consumers consider "quality" and they improve the overall vision of what the company should work toward. ISO TS 16949 has both external and internal benefits for the companies. Some of the external benefits are the following: Improves customer focus; Boost international acceptance and credibility; Places the company in an elite category of businesses; Keeps the company prepared for external audits and inspections; Facilitates continual improvement; Provides competitive advantage etc. The internal benefits of an ISO/TS 16949:Transforms operations from detection mode to prevention mode; Creates consistency throughout the organization built around "best practices"; Improves business performance; Lessens dependency on key individuals; Provides blueprint for controlled, disciplined growth; Ensures

consistent training; Improves management oversight. Companies that implement the ISO 14001 standard will be ready to support their customers' environmental needs sooner, rather than later. The benefits are: Reduced costs – achieved through reduced: energy consumption, waste oils and solvents, use of raw materials and solid waste; Reduced liability -Once the potential incidents are identified, they can be addressed accordingly and prevented. Not only is the risk of an accidental release significantly decreased, but the potential financial and legal impact may also be reduced because due diligence can be proven; Employee buy-in - ISO registrars have been impressed by the level of employee support for ISO 14001. Initially an over - looked benefit, employee buy-in may be one of the most important benefits of an EMS, as they become aware that they can contribute to minimizing these impacts, as well as to other environmental projects of the plant. The results and benefits that can be achieved by implementing ISO 26000 are the following: Competitive advantage; Reputation; Ability to attract and retain workers or members, customers, clients or users; Maintenance of employees' morale, commitment and productivity; View of investors, owners, donors, sponsors and the financial community; Relationship with companies, governments, the media, suppliers, peers, customers and the community in which it operates. The organisation will accrue some of the numerous benefits implementing the ISO 50001, including: Reduced greenhouse-gas (GHG) emissions and carbon footprint; Informed decision-making processes from system design through to operation; Increased energy awareness among staff members at all levels; Structured approach to the Right First Time methodologies; Improved corporate image and credibility with all stakeholders and customer; Enhanced security of energy supply and reduction of energy risk exposure in areas within the organisation and commenced processes; Improved operational efficiencies and maintenance practices.

#### CONCLUSION

The automotive industry is an important industry in manufacturing sector. The opportunity to play a part in the creation of International Standards, based on experts from different countries reaching agreement, is vital to those corporations which are determined to succeed in the decades ahead. ISO standards provide specifications for safety, quality, performance and environmental impact (benefits for the manufacturer); Harmonized requirements enabling outsourcing, fair competition, the participation of suppliers from developing countries and drive down costs by facilitating competitive tendering (for a supply chain); The technical basis - regularly reviewed and improved – for legislation on aspects such as safety and

pollution (for regulators); ISO standards make it simpler and safer to drive vehicles, while protecting passengers (especially children) and pedestrians, and lower the cost of buying vehicles (for consumers and users); They facilitate innovation and the roll-out of new technologies by providing globally harmonized terminology and consensus on health, safety and environmental aspects (for research and development). The opportunities for innovation and standards need to go hand in hand. It is the only way to advance innovation and address seriously the great challenges of pollution, security and energy savings. There are many examples of available technologies that have not found their way to the market because it was missing an agreement as to what standard should be used. Some organizations struggle with the concepts of quality standards or they see it as a complex system. But with a little bit of information, help and a clear understanding of why quality standards can benefit them, organizations can learn to embrace quality standards rather than buck against them. The need and purpose of quality standards is crucial.

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