



## Integration of management systems: an evolution

### What is a management system?

**A**ccording to ISO 9000:2005, a “management system” is defined as “a set of interrelated or interacting elements to establish policy and objectives as well as to achieve those objectives.” Management system standards are based on the Deming plan-do-check-act cycle. Organizations “plan” by identifying how they are affected by internal and external factors, developing objectives and formulating action plans to achieve them. They “do” by ensuring the competence of people, maintaining equipment, ensuring accurate measurements, and, most importantly, controlling operational processes, their own or subcontractors’. Organizations “check” by monitoring and measuring their performance, like products, processes, resources consumed, waste produced, and number of occupational health and safety (OHS) incidents. At system level, organizations evaluate compliance with obligations and conduct internal audits to determine conformity with the requirements of the management system.

Organizations “act” to correct nonconformities, identify their root causes, and eliminate them. They also “act” by analyzing measurement data, drawing conclusions on what worked and what did not, and reviewing the performance of the entire management system. Finally, organizations “act” by deciding what to improve next in a “management review.”

### Quality management systems

“Quality” can be defined as “fitness for purpose.” In the 3rd edition of ISO 9001 in 2000, quality was defined as the “degree to which a set of inherent characteristics fulfill need or expectation that is stated, generally implied, or obligatory.” Earlier versions of ISO 9001 focused on quality assurance, where conformity with contractual requirements and product specifications was the aim. The standard writers of Technical Committee (TC) 176/Subcommittee (SC) 2 introduced eight quality management principles, such as the process approach and continual improvement.

The purpose of ISO 9001 is to support organizations in demonstrating their ability to provide products meeting customer, statutory, and regulatory requirements consistently, while enhancing customer satisfaction through effective application of the standard. Examples of the latter include processes for continual improvement and assurance of conformity.

### Environmental management systems

The arrival of the Industrial Revolution led to massive consumption of natural resources and generation of unprecedented amounts of waste. Humans did not realize their profound impact on the earth, until serious problems occurred. The purpose of an environmental management system (EMS) is to help organizations achieve and demonstrate sound performance by controlling the environmental impacts of their activities, products, and services, consistent with their policy and objectives and taking into account compliance obligations. Prior to the publication of the first edition of the ISO 14001 EMS standard in 1996, there were national standards such as the EMAS in the UK and sector standards such as those in the oil and gas industry.

### OHS management systems

OHS management systems have an internal focus, the well-being of people, including employees, subcontractors, and even visitors. Various types of hazard exist in the workplace: physical (e.g., electricity); chemical (toxic substances); biological (viruses); psychological (stress); physiological (needs of the human body); and ergonomic (man-machine interface). An OHS management system is meant to control risks and improve OHS performance by identifying hazards, conducting risk assessments, and determining the necessary controls such as elimination, substitution, engineering controls, administrative controls, or personal protective equipment.

### Integration

All management system requirements should be seamlessly integrated with the daily activities of an organization. Some organizations end up with more than one management system, i.e., a quality management system, a differently structured EMS, and another system for OHS. This could be a source of frustration and inefficiency. The preference for integration is obvious, with the resulting unity of command, efficiency, and consistency. Generally, there are three levels: integrated policy alone; integrated policy and system procedures such as documentation control, internal audits, and corrective actions, although operational procedures are not integrated; and fully integrated policy, system procedures, and operational procedures.

### Annex SL

Presently, ISO 14001 and OHSAS 18001 have similar

structures, with requirements included in clauses 4.1 to 4.6. ISO 9001, however, has requirements under clauses 4 to 8. The different structure and at times slight differences in definitions have not facilitated the integration of management systems in different disciplines. ISO senior management has developed a common structure for a new generation of standards, included in the ISO/IEC Directives, Part 1, Consolidated ISO Supplement—Procedures specific to ISO, third edition, 2012, as Annex SL (Annex SL).

Annex SL covers “Proposals for management system standards.” However, it also includes three “normative” (meaning mandatory) appendices: Appendix 1, Justification criteria questions; Appendix 2, High-level structure, identical core text and common terms, and core definitions for use in management system standards; and Appendix 3, High-level structure, identical core text, common terms, and core definitions. The high-level structure consists of 10 elements. In the high-level structure, Annex SL introduces concepts such as “context of an organization,” i.e., where an organization is obliged to determine internal and external factors that could affect its quality, environmental, or OHS performance within the integrated management system (IMS). Another important concept introduced in Annex SL is “risk-based thinking.” Organizations should determine risks that need to be addressed to ensure that the IMS can achieve its intended results, enhance desirable effects, prevent or reduce undesired effects, and achieve continual improvement.

#### **New generation**

Based on the Annex SL high-level approach, both ISO/TC 176/SC 2 and ISO/TC 207/SC 1 have been reviewing ISO 9001 and ISO 14001. It is expected that the Final Draft International Standard (FDIS) for ISO 9001 will be pub-

lished in July 2015, with the ISO 14001 FDIS to follow. Even though OHSAS 18001 is an international standard, it is not an ISO standard yet. ISO/PC 283 was established in 2013 to develop an ISO OHS management standard to be known as ISO 45001. ISO 45001 will be based on the Annex SL structure. The standard is now in the Committee Draft stage and it is expected to be published in 2016.

#### **The way forward**

Many organizations start their ISO 9001 journey based on customer certification requirements. With increasing hands-on experience, management as well as staff involved realize the infinite potential of the ISO 9001 system and how it can be a management control platform to support and improve organizational performance at various levels. The IMS is another step forward as an effective tool to facilitate process control, prepare for emergencies, and ensure consistency. Top management should view IMS adoption from a long-term strategic perspective, not as a bid to be on a client’s tender list. 🌀



*Ng Ha Wai, Howie is an international adviser and lead tutor/lead auditor in ISO management systems. He is a member of the ISO/TC 176/SC 2, ISO/TC 34/SC 17, and ISO/PC 278 and has been active as a resource person for the APO. Mr. Ng’s career started in General Electric and progressed through the career ladder in Motorola, Philips, and Whirlpool. He received a BSc (Eng.) and MSc (Eng.) from the University of Hong Kong, and an MBA from York University (now Schulich School of Business) in Toronto, Canada.*