ISO Management System Standards – a tutorial for ITAM practitioners

This paper describes the basics of an ISO Management System Standard (MSS) for ITAM practitioners. An understanding of this topic is important because many of the most important management systems in organizations today are defined by these standards, both inside IT and throughout the organization as a whole. Knowing how they are constructed, and how they can be used in an integrated way, can help to break down silos between different disciplines both within IT and across the organization. This chapter does not attempt to give a comprehensive overview of MSSs, but rather only a working knowledge sufficient to enable people to work more effectively in an organization where more than one management system standard is being used, or is possibly being considered for use. More information about MSSs is available from ISO. The main requirements for MSSs are given in the ISO Directives Part 1, ISO Supplement, Annex SL, which is commonly referred to simply as 'Annex SL'. This chapter refers to the 2016 version of Annex SL, and refers to a 'Type A' MSS which is for requirements definition.

ISO recognizes the Management System Standard (MSS) as a special class of standard. The official ISO definition for a management system is a "set of interrelated or interacting elements of an organization to establish policies and objectives and processes to achieve those objectives." The two traditionally most popular MSSs are ISO 9001 for quality management, and ISO 14001 for environmental management. The two best known for IT are ISO/IEC 27001 for information security management, and ISO/IEC 20000-1 for service management. The ISO ITAM standard (ISO/IEC 19770-1) is an MSS. There are many others, such as ISO 22301 for business continuity management and ISO 50001 for energy management. ISO 55001 is for asset management, especially physical asset management.

1. Background

Management system standards started with ISO 9001 for quality management. Some people held the view that ISO 9001 was the only MSS which was needed, if the scope was properly defined. However, this did not provide sufficient assurance of meeting the specific requirements of different areas of management, and as a result many other MSSs were developed with the same basic concepts (especially the 'plan-do-check-act' Deming cycle), but with variations such as about the level of prescription for procedures and records to be maintained.

In order to bring more consistency to the different MSSs, and to make it easier to implement and assess them together, ISO established a project which resulted in 'Annex SL'. All previous MSSs have to be rewritten to conform to Annex SL, and all new MSSs have to be written in this way as well. Many or most previous MSSs have already been rewritten, including ISO 9001 and ISO/IEC 27001. Edition 3 of ISO/IEC 19770-1 (the ISO ITAM standard) is such a revision. ISO/IEC 2000-1 for service management is still in the process of being revised as of this writing.

2. Key features of Management System Standards

There are three key features of MSSs which should be understood:

- **Common high-level structure.** Annex SL requires that every MSS uses the same high-level organizational structure. Sub-headings can be added, but nothing changed or taken away. The common high-level structure is described in more detail in the table below.

- **Common wording.** Annex SL requires that every MSS includes specific common wording, covering many of the basic requirements of every management system. Words can be added, but nothing changed or taken away (with limited exceptions).

- **Common concepts.** The text of Annex SL implicitly dictates a hierarchy of concepts which forces an alignment of terminology and prevents many alternatives commonly used in management. In particular:

  - Policy is the top-level concept. This is the "intentions and direction of an organization, as formally expressed by its top management"

  - Objectives represent the second-level concept. An objective is a "result to be achieved." "In the context of management systems, objectives are set by the organization, consistent with the policy, to achieve specific results." Objectives "can be strategic, tactical, or operational".

  - Planning (and plans) is the third-level concept. Planning is the activity undertaken about how to achieve objectives.

  There are challenges in following Annex SL to conform to these concepts, and reflect other hierarchies such as the strategic, tactical, and operational. Incidentally, the term 'strategy' is not used, but only the adjective 'strategic'.

3. High-level structure

The table below gives the required high-level structure for an ISO Management System Standard, together with some comments to aid understanding.

ISO Management System Standard Mandatory High Level Structure

Mandatory High-Level Structure	*Comments*
Introduction	
1. Scope	
2. Normative references	
3. Terms and definitions	
4. Context of the organization	
4.1 Understanding the organization and its context	This clause identifies the issues with which the management system must deal. These include in particular risks and opportunities.
4.2 Understanding the needs and expectations of interested parties	This clause identifies the effective requirements for the organization, given the risks and opportunities identified above.
4.3 Determining the scope of the XXX management system	
4.4 XXX management system	This is just a straight-forward requirement statement that the organization shall establish, maintain, and continually improve its management system.

5. Leadership	
5.1 Leadership and commitment	Top management shall demonstrate leadership and commitment in a number of specified ways.
5.2 Policy	Top management shall establish the policy that drives the management system.
5.3 Organizational roles, responsibilities and authorities	Top management shall ensure that organizational roles, responsibilities and authorities are defined.
6. Planning	
6.1 Actions to address risks and opportunities	Actions shall be planned to address the risks and opportunities identified in 4.1
6.2 XXX objectives and planning to achieve them	Actions shall be planned to establish, and then achieve, the objectives of the management system.
7. Support	
7.1 Resources	Adequate resources shall be provided.
7.2 Competence	Necessary competence shall be acquired.
7.3 Awareness	Personnel shall be made aware of relevant policy etc.
7.4 Communication	Communication requirements shall be determined.
7.5 Documented information	Information which must be retained for audit purposes is defined.
7.5.1 General	
7.5.2 Creating and updating	
7.5.3 Control of documented information	
8. Operation	This clause is the one which is expected to have the most sub-clauses added to it, to reflect the specific requirements of each different MSS.
8.1 Operational planning and control	This is the only pre-specified operational process at the sub-heading level. (Change control is also specified, but only in mandatory wording, not as a sub-heading.)
9. Performance evaluation	
9.1 Monitoring, measurement, analysis and evaluation	
9.2 Internal audit	
9.3 Management review	

10. Improvement	
10.1 Nonconformity and corrective action	
10.2 Continual improvement	

4. Challenges

Although using Annex SL is a major advance in being able to use different Management System Standards in a consistent and integrated way, there are nonetheless still some challenges in achieving this. In particular:

- **Clause numbering.** Because each MSS can control its own numbering within the top-level structure, there can be considerable inconsistency between different MSSs in detailed clause numbering.

- **Added text.** Because each MSS can add text to the mandatory Annex SL text, there may be significant differences between the final text in two different MSSs corresponding to a specific section of mandatory Annex SL text.

It is likely that organizations which wish to implement multiple MSSs in an integrated manner will create a spreadsheet of requirements showing, by column, each MSS's requirements, with comparable clauses shown on the same row. Annex SL text might also be added as an additional column, to highlight the common base.