
**Information technology — Service
management —**

**Part 5:
Implementation guidance for ISO/IEC
20000-1**

Technologies de l'information — Gestion des services —

*Partie 5: Exemple de plan de mise en application pour l'ISO/CEI
20000-1*

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see <https://patents.iec.ch>).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 40, *IT Service Management and IT Governance*.

This first edition cancels and replaces the second edition (ISO/IEC TR 20000-5:2013), which has been technically revised.

The main changes are as follows:

- updated relevant content based on the release of ISO/IEC 20000-1:2018;
- taken into account organizations which are not mature in service management;
- revised a three-phased plan to manage a service management system (SMS) implementation.

A list of all parts in the ISO/IEC 20000 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

This document provides guidance for organizations on how to implement a service management system (SMS).

An SMS supports the management of the service lifecycle, including the planning, design, transition, delivery and improvement of services, which meet agreed requirements and deliver value for customers, users and the organization delivering the services. ISO/IEC 20000-1 specifies requirements for planning, establishing, implementing, maintaining and continually improving an SMS.

This document focuses on providing the key considerations and different approaches for organizations which want to plan and implement an SMS for the first time or improve an existing implementation. These organizations, also known as service providers, can provide different types of services using technology and digital information. They can be of any size, sector or type, with different organizational structures or business models.

Organizations can approach the implementation of an SMS in any way: as part of a programme, a major project, or in a more incremental manner with different phases or iterations. The results of any gap analysis will determine which approach is appropriate for each organization. Organizations can use different methodologies for an SMS implementation.

This document addresses the typical steps for implementation of a phase or a whole project including project initiation, planning, implementation, evaluation and future action. Implementation of an SMS based on three maturity levels is also described in this document.

During the implementation of an SMS, an organization will potentially face many challenges. This document illustrates some of the challenges and the key considerations for overcoming them.

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Information technology — Service management —

Part 5:

Implementation guidance for ISO/IEC 20000-1

1 Scope

This document provides guidance for organizations on how to implement a service management system (SMS). Organizations can use this document to implement the entire SMS in order to conform to the requirements specified in ISO/IEC 20000-1, or parts of an SMS for a selected subset of requirements. This document illustrates a generic plan to manage implementation activities for an SMS.

The intended users of this document are:

- a) organizations that require support on how to implement an SMS;
- b) consultants and advisors who support an organization during SMS implementation.

This document can be used together with the other parts of ISO/IEC 20000 series.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 20000-1, *Information technology — Service management — Part 1: Service management system requirements*

ISO/IEC 20000-10, *Information technology — Service management — Part 10: Concepts and vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 20000-1 and ISO/IEC 20000-10 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Key considerations

4.1 Understanding ISO/IEC 20000-1

The success of an SMS implementation depends on top management commitment and the organization's personnel understanding:

- a) ISO/IEC 20000-1 requirements;
- b) service management policies and objectives;

- c) service requirements;
- d) any new or changed practices, roles or organizational structures implemented to support the SMS.

4.2 Appropriate use of an SMS

Appropriate implementation and use of an SMS ensures that:

- a) the requirements of all service level agreements and contractual obligations are defined, implemented and tracked;
- b) new and existing customers' needs and expectations will be met by demonstrating the ability to meet the organization's commitments;
- c) new services and changes to existing services to meet customer requirements are introduced without disrupting current service provision or affecting the integrity of the services;
- d) all levels of management are aware of the resources and capacity (such as human, technology and financial) needed by an organization to meet current and future customer requirements;
- e) the activities of all parties involved in the service lifecycle are coordinated and integrated in order to meet service requirements;
- f) service personnel comply with the organization's policies and top management priorities as stated in the service management objectives;
- g) a common service management vocabulary between the organization and all interested parties is established;
- h) a feedback mechanism is established to manage the outcomes of the SMS and the services;
- i) communication with customers and other interested parties is established and continually improved;
- j) all internal or external parties who contribute to service provision enhance the organization's capability to meet agreed requirements and deliver value for customers, users and the organization;
- k) when performance issues with infrastructure and service components are identified, the organization takes corrective actions in order to continue to meet all service requirements and contractual obligations;
- l) the service portfolio is developed and maintained to support organizational objectives and ensure budgets for services are established, accounted for and managed;
- m) the organization maintains or improves its reputation by demonstrating delivery of services against commitments;
- n) personnel, whose work affects performance and effectiveness of service management and the services, are competent and their competence is monitored and improved;
- o) all levels of the organization understand the service requirements and performance commitments.

4.3 Scope of an SMS

Before any detailed planning activity starts, the organization should ensure that ISO/IEC 20000-1 is applicable to the organization. This applicability should take into account the scope of the services, service management activities and the contribution of other parties (see ISO/IEC 20000-1:2018, 1.2).

The organization should identify and agree a suitable scope for its SMS, using requirements from ISO/IEC 20000-1:2018, 4.3 and the guidance on scope definition and applicability provided in ISO/IEC 20000-3. Even when an organization is using ISO/IEC 20000-1 to implement just one process or a group of processes, the scope of the SMS should be defined.

An organization can initially plan to implement its SMS based on the requirements specified in ISO/IEC 20000-1 for only part of its services. The organization can decide in the future to extend the current SMS scope (including covered services). It should be noted that the guidance in this document is based on the defined scope that remains unchanged during implementation. When an organization decides to define or extend the scope of the SMS, the approaches defined in ISO/IEC 20000-3 can be followed. Implementation timeframes can be shortened in future improvement efforts, as the organization gains practical experience and can extend what has already been done to a larger scope of the SMS and the services covered.

4.4 An SMS as a goal-oriented system

An SMS is neither an abstract or conceptual system, nor a process model, or a collection of processes. It is a set of interrelated or interacting elements of an organization used to establish service management policies and objectives aligned with the organization's strategic direction. The essence of an SMS is 'togetherness': the drawing together of various elements and interactions producing a whole system rather than a collection of silos connected solely by information systems and shared facilities.

An SMS is a goal-oriented system with specified elements and outcomes which work together to be efficient and effective. These elements include people, competence, plans, processes, policies, infrastructures, knowledge, tools and facilities. The potential outcomes can include trust, reputation, customer loyalty, competence and competitive advantage.

Organizations implement an SMS to take inputs, for example, customer requirements and use a set of interrelated or interacting activities to deliver intended outcomes. Feedback loops provide information on these activities to drive sustainable improvements of performance which can require changes to the SMS or the organization. The SMS is resilient and adaptable, able to respond to changing requirements as well as internal or external, anticipated or unanticipated events. In addition, audits and reviews provide the opportunity to maintain or improve an SMS.

4.5 Support and commitment

The ISO/IEC 20000-1 requirements place significant responsibility on top management to demonstrate its leadership, with respect to service management objectives and policies, aligned with an organization's strategic direction.

Effective leadership is required for organizations to implement and operate an SMS. Without effective leadership, the direction of an organization's SMS may be defined separately by different management groups, resulting in inconsistency.

Top management is accountable for the performance, efficiency and effectiveness of the SMS and the services. The successful implementation of an SMS depends on the commitment of all personnel with different levels of authority. Commitment starts with top management and extends across the organization.

Top management should adopt a way of thinking about the performance, efficiency and effectiveness of the SMS and services. This strongly influences personnel activities and motivates them to support and participate actively in achieving SMS objectives.

It is not an option for top management to act as an observer with respect to an SMS and the services. However, accountability does not mean that all decisions are made by top management. Where responsibility for achieving objectives and delivering services is delegated within the organization or contracted to a third party, top management always remains accountable for the SMS and delivery of services.

Although incremental implementation is a suitable way of SMS adoption, for some organizations successful implementation of an SMS requires a major change in thinking and communicating across all interested parties. For more mature organizations, the implementation of an SMS may require smaller adjustments to their ways of working.

The successful implementation of an SMS is highly dependent on management support and commitment. Establishing management support and commitment should be achieved as soon as possible and sustained during all the SMS implementation phases as well as SMS operations. Based on initial analysis, a business case can help clarify understanding and establish commitments. It can help sustain support and commitment for each phase and, therefore, effectively address risks related to the success of planned changes.

Management should ensure that priorities are defined appropriately. The organization should aim to maintain the understanding and involvement of all interested parties during all phases, not just at the start.

4.6 Risk-based thinking

Risk-based thinking is not new and is now embedded in ISO management systems standards such as ISO 9001, ISO/IEC 27001 and ISO/IEC 20000-1.

The introduction of risk-based thinking allows management to prioritize customer requirements and define the effect of those requirements on service provision. It ensures that the risks, including the potential advantages or disadvantages of any specific course of action, are fully understood before making a decision. In applying risk-based thinking, both short-term and long-term benefits are considered. It is possible to sacrifice a short-term benefit to achieve a long-term one.

The risks and opportunities identified by an assessment of the organizational context are addressed during SMS planning to give assurance that the SMS can achieve its intended results. Having assessed the risks and addressed them in the implementation plan, organizations can implement an SMS with confidence. If the effects of the identified risks turn out differently, it can be necessary for the organization to revise the implementation plan.

Risk assessment is the overall process of identification, analysis, evaluation and treatment of risks. ISO 31000, ISO/IEC 20000-2 and other sources provide advice on risk assessment.

Categorizing risks and maintaining their historical data makes assessment and treatment of similar risks in the future much easier.

4.7 Project readiness

Based on the business case and gap analysis described in [Clause 5](#), the following items should be considered when developing the project management plan:

- a) scope of the SMS;
- b) timeframe and schedule;
- c) human resources;
- d) data, information and tools;
- e) allocation of financial resources;
- f) identification of risks and issues that impact the project and cause conflicting priorities;
- g) early identification and engagement of interested parties, both for the services in the scope of the SMS and the SMS implementation project;
- h) service management maturity within the organization;
- i) receptiveness to change within the organization and the ability of the organization to manage the changes successfully;
- j) project management and control methods;
- k) procurement requirements;

- l) project review procedures to identify achievements and opportunities for improvement.

4.8 Project team

A project team should have strong leadership and expertise in establishing and implementing service management policies, processes and continual improvement activities.

Selecting personnel for the project team who are also involved in day-to-day operational activities can lead to conflicting priorities. To avoid impact on a project, management should support their new roles and responsibilities and control workloads.

The project team should have expertise in and be responsible for:

- a) managing projects;
- b) designing and implementing an SMS;
- c) defining the procedure for developing and implementing new or changed processes;
- d) developing, implementing and integrating processes within the scope of the SMS;
- e) minimizing the impact of the SMS implementation on day-to-day activities;
- f) testing and measuring the efficiency, effectiveness and continual improvement of processes;
- g) managing organizational change, communication and training.

The project team should be aware that the effectiveness of the SMS depends on the integration of the service management processes. Defining the processes and understanding their integration at the beginning of the project can help ensure the coherent implementation of the SMS based on the requirements specified in ISO/IEC 20000-1. It is also vital to ensure the integration of the SMS requirements and processes into the organization's business processes so that the SMS requirements are not additional to, but part of, business as usual for the organization.

Process owners and operational managers can play an important role in identifying and managing changes to improve processes. As process owners are identified, they should contribute to and support the project team. Service owners should also support the implementation of the SMS to ensure that it will be able to deliver high-quality services in an efficient way throughout the service lifecycle. Operational managers, who are also process managers, should contribute to the SMS implementation by providing accurate information about the operational level of each process and performing improvement activities to achieve the target level.

For some organizations, the process owner can often be the same individual for multiple processes. Although the process owner role can be combined with the process manager role, there is a risk when one person holds both the owner and manager role within the same process. In some organizations, it can be difficult to separate the roles of process owner and process manager, in which case, additional controls will be required. Other organizations can find benefits in identifying people with increased process specialization and responsibilities. In these organizations, a process owner is only responsible for a single process.

Operational managers, if different from the process owners and service owners, should also be represented on the project team. This ensures they are kept aware of any changes affecting operations. Their involvement also ensures that the plans are realistic and that they minimize the impact on day-to-day operations.

NOTE Guidance on the responsibilities of process owners, process managers and service owners is provided in ISO/IEC 20000-2. For convenience, the definitions are shown here.

- A process owner role is responsible for the design of the process, ensuring adherence to the process and the measurement and improvement of the process.

- A process manager is responsible for the operation of the process and the management of the process management resources.
- A service owner role (can be a member of top management or an operational manager) is responsible for a service throughout the service lifecycle, including planning, design, transition, delivery, improvement and retirement.

4.9 Outsourcing some part of implementation

When some of the service management implementation activities are outsourced, it is important to ensure that all parties:

- contribute to a successful SMS implementation by taking an active role;
- communicate effectively throughout the implementation;
- understand and confirm the role(s) and responsibilities in implementation;
- agree clear terms and conditions for their part in the implementation of the SMS;
- participate in decision making effectively.

Accountability for the implementation project and its success cannot be delegated in any way to an external supplier. The implementation project team plans and executes under the organization's control and stewardship. If a supplier is unwilling or unable to participate, it may be necessary to find an alternative, if possible. Additionally, the following subclauses in ISO/IEC 20000-1 can be of use when considering outsourcing in an SMS implementation project:

- a) Subclause 4.2 — Understanding the needs and expectations of interested parties;
- b) Subclause 6.2 — Service management objectives and planning to achieve them;
- c) Subclause 6.3 — Plan the service management system;
- d) Subclause 7.4 — Communication;
- e) Subclause 7.5.4 — Service management system documented information;
- f) Subclause 8.2.3 — Control of parties involved in the service lifecycle;
- g) Subclause 8.3 — Relationship and agreement.

NOTE General guidance for outsourcing is provided in ISO 37500.

4.10 Tools

All organizations will use a variety of toolsets to support their existing operations. Some can be sophisticated, fully able to support an SMS implementation, while others are less able to do this.

For some organizations, the decision to implement an SMS can drive a toolset review and the acquisition of new ones that are better able to support the work.

ISO/IEC 20000-1 does not specify that any particular tool or toolset should be used. Each organization should decide what works best, given their specific requirements and circumstances, e.g. budget limits.

The toolsets should be assessed to ensure that they can support the operation of the SMS as stated in ISO/IEC 20000-1:2018, Clause 8.

In addition, the following subclauses in ISO/IEC 20000-1:2018 can be of particular use:

- a) Subclause 7.1 — Resources;
- b) Subclause 7.5 — Documented information;

c) Subclause 7.6 — Knowledge.

4.11 Very small entities

For very small entities (VSEs), there will be challenges in implementing an SMS. These can include staffing of roles and responsibilities, defining the benefits versus the costs and not taking a strict interpretation of the requirements in ISO/IEC 20000-1. For example, ISO/IEC 20000-1 only states that “configuration information shall be recorded to a level of detail appropriate to the criticality and type of services”. This does not mean that a VSE is required to buy an expensive configuration management toolset when a spreadsheet can be good enough.

NOTE A VSE is an organization or unit of fewer than 25 people (as defined in ISO/IEC TR 29110-1).

A VSE considering the implementation of an SMS based on ISO/IEC 20000-1 should ask itself questions such as, “How do we manage changes now?”, “How can we improve?” and “What are the benefits of ISO/IEC 20000-1 for us?”.

The requirements in ISO/IEC 20000-1:2018, Clause 8 should be assessed for their applicability in the context of the VSE.

In addition, the following clauses and subclauses in ISO/IEC 20000-1:2018 can be of particular use to a VSE in an SMS implementation project:

- a) Subclause 4.3 — Determining the scope of the service management system;
- b) Subclause 5.3 — Organizational roles, responsibilities and authorities;
- c) Clause 6 — Planning (covered in [Clause 5](#) of this document);
- d) Clause 7 — Support of the service management system.

4.12 Integration with other management systems

Organizations that decide to implement an SMS can already have experience implementing other management systems or can decide to implement an SMS together with another management system such as ISO 9001 or ISO/IEC 27001.

In order to reduce redundancy and become more efficient, one option for organizations is to implement an integrated management system. Although the idea of implementing an integrated management system has many advantages, it can require additional resources, such as longer timelines, timescales and higher costs. The added complexity can expose the organization to new risks. If the organization is unable to manage the risks or allocate additional resources, it will not benefit from implementing an integrated management system. It can also fail to implement an SMS. Understanding the current state of the organization is important in making a decision to implement the SMS separately or to integrate it with other management systems. The following factors should be considered and documented in a business case before making any decision:

- the risks and opportunities (separated and integrated);
- the scope and objectives of an SMS and other management systems (common, partially overlapping or completely separate scope and/or objectives);
- the need to implement an integrated management system (operational or strategic factors);
- the organizational maturity in implementing management systems;
- the impacts of implementing an integrated management system on:
 - customers or interested parties,
 - organizational operations,

- the organization's strategic direction,
- top management commitment,
- services;
- the additional resources, authorities and responsibilities required to implement an SMS integrated with other management systems;
- the overlapping or common elements of an SMS and other management systems.

If an organization decides to implement an SMS integrated with other management systems, they should:

- a) perform a mapping of SMS requirements against the other management systems to define what can be integrated and how;
- b) consider the integration of the common requirements such as leadership and commitment, planning, determining and acquiring competence, control of documented information, monitoring, measurement, analysis and evaluation, internal audits, management reviews and continual improvement;
- c) use the guidelines for implementing an SMS with other management system standards, such as:
 - 1) ISO/IEC TR 20000-7;
 - 2) ISO/IEC 27013;
 - 3) The ISO Handbook – Integrated Use of Management System Standards (IUMSS);
- d) decide how to run the implementation projects, such as:
 - 1) implement each management system separately and later run a new project to integrate them;
 - 2) execute management systems implementation projects concurrently within one programme that includes integration work to ensure alignment and integration. A separate group can be responsible for the integration work.

4.13 Organizational change management

A successful implementation of an SMS requires managing the human aspects of the change through organizational change management. Personnel need to be encouraged to change their behaviours, e.g., by taking on new roles and responsibilities. Some organizations establish a Change Management Office which interacts with a Project Management Office to support the smooth and successful implementation of an SMS. Areas where organizational change management can be helpful are shown in [Clause 6](#), [Table 2](#).

5 Implementation steps

5.1 Implementation considerations

Organizations that decide to use this document fall into the following categories.

- a) Organizations that have never implemented an SMS before and now decide to do so.
- b) Organizations that have already implemented an SMS and need to change it to improve performance or effectiveness of the SMS.
- c) Organizations that decide to implement only a subset of the requirements specified in ISO/IEC 20000-1.

The decision to implement, or improve an SMS, can be driven by, but not limited to:

- political, economic, social, technological, legal and environmental forces;
- the requirements of customers and other interested parties;
- the organization's objectives or policies;
- nonconformities reported by audits;
- feedback and complaints from customers or other interested parties;
- the output of management reviews.

The typical steps which are used for implementation are shown in [Figure 1](#) and described in [subclauses 5.3](#) to [5.7](#). An organization can adjust these steps according to its culture and goals.

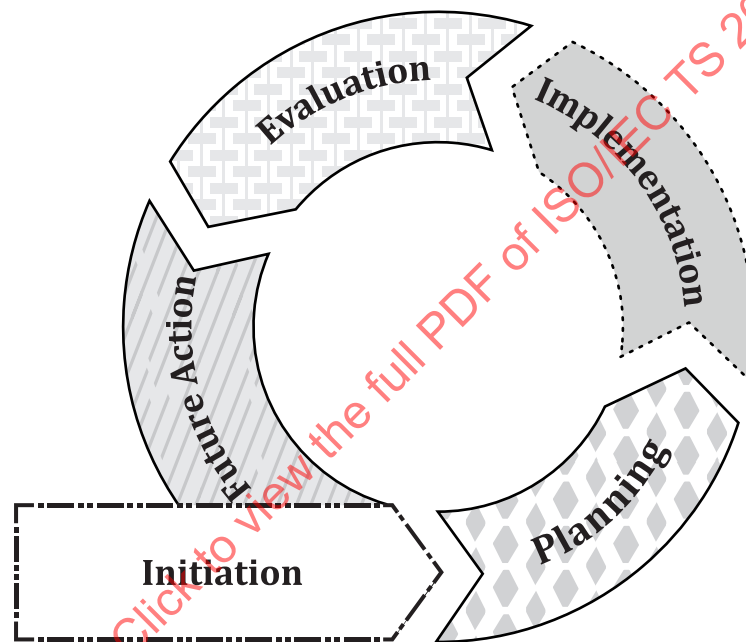


Figure 1 — Typical implementation steps

Organizations can approach the implementation of an SMS in any way, from a major project with aggressive timescales and targets, to something smaller, using methodologies such as Agile, in a more incremental manner and with different phases or iterations. Whichever approach is chosen, no organization can claim conformity with ISO/IEC 20000-1 unless all requirements specified in ISO/IEC 20000-1:2018, Clauses 4 to 10 have been met.

The chosen approach can be used with ISO/IEC 20000-2, ITIL¹⁾ and other guidance or frameworks. The relationship between ISO/IEC 20000-1 and ITIL is described in ISO/IEC 20000-11.

5.2 Phased implementation

5.2.1 General

Phased implementation allows organizations to start simply and move forward by dividing the work to make it more manageable. Each phase can have a limited set of goals or objectives. This makes it

1) ITIL® is a registered trade mark and product owned by AXELOS Limited. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO and IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

easier to maintain progress and manage the expectations and needs of customers and other interested parties.

Using feedback throughout and after each phase will quickly deliver incremental value, even if circumstances change. [Figure 2](#) shows an example of phased implementation.

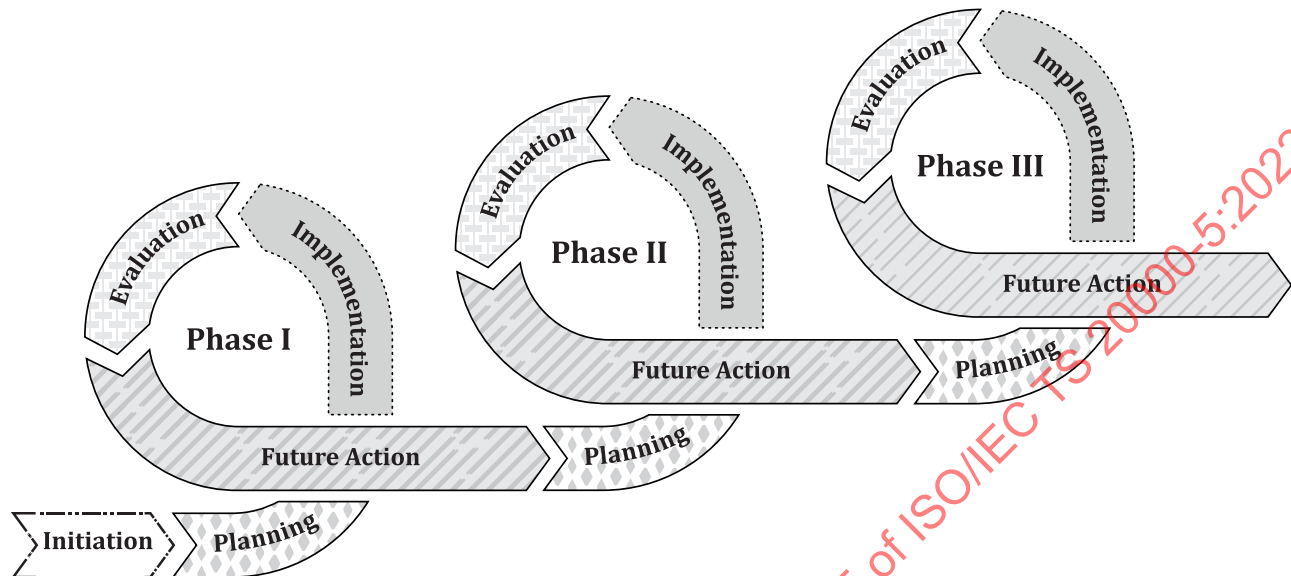


Figure 2 — Phased implementation

The phases described in this document do not include changes to the intended scope of the organization's SMS. Instead, each phase should improve the SMS in alignment with the organization's agreed scope, building on the results of the previous phase.

There are different approaches for defining the scope of each phase. The results of any gap analysis will determine which approach is appropriate for each organization. Some possible approaches are:

- Approach 1: A subset of SMS processes in each phase;
- Approach 2: Evolution of the SMS at three levels.

If an organization provides services with different maturity levels, the phased approach can be useful limiting the scope of each phase to the provision of services with the same maturity levels. Alternatively, the organization can develop a programme covering a number of different implementation or integration projects, where each project scope includes implementing the SMS for services with the same levels of maturity.

5.2.2 Approach 1: A subset of SMS processes in each phase

In this approach, each phase contains a subset of SMS processes to be implemented or improved. Additional processes are then added so that all processes are implemented by the end of the last phase. A subset of processes can include any group of SMS processes. A suggested approach for defining the groups is to use subclauses 8.1 to 8.7 in ISO/IEC 20000-1:2018. This approach for a phased implementation is defined in the next paragraphs and presented in [Figure 3](#).

Implementation of the resolution and fulfilment processes, which allow an organization to respond to service disruptions, is at the highest level of priority.

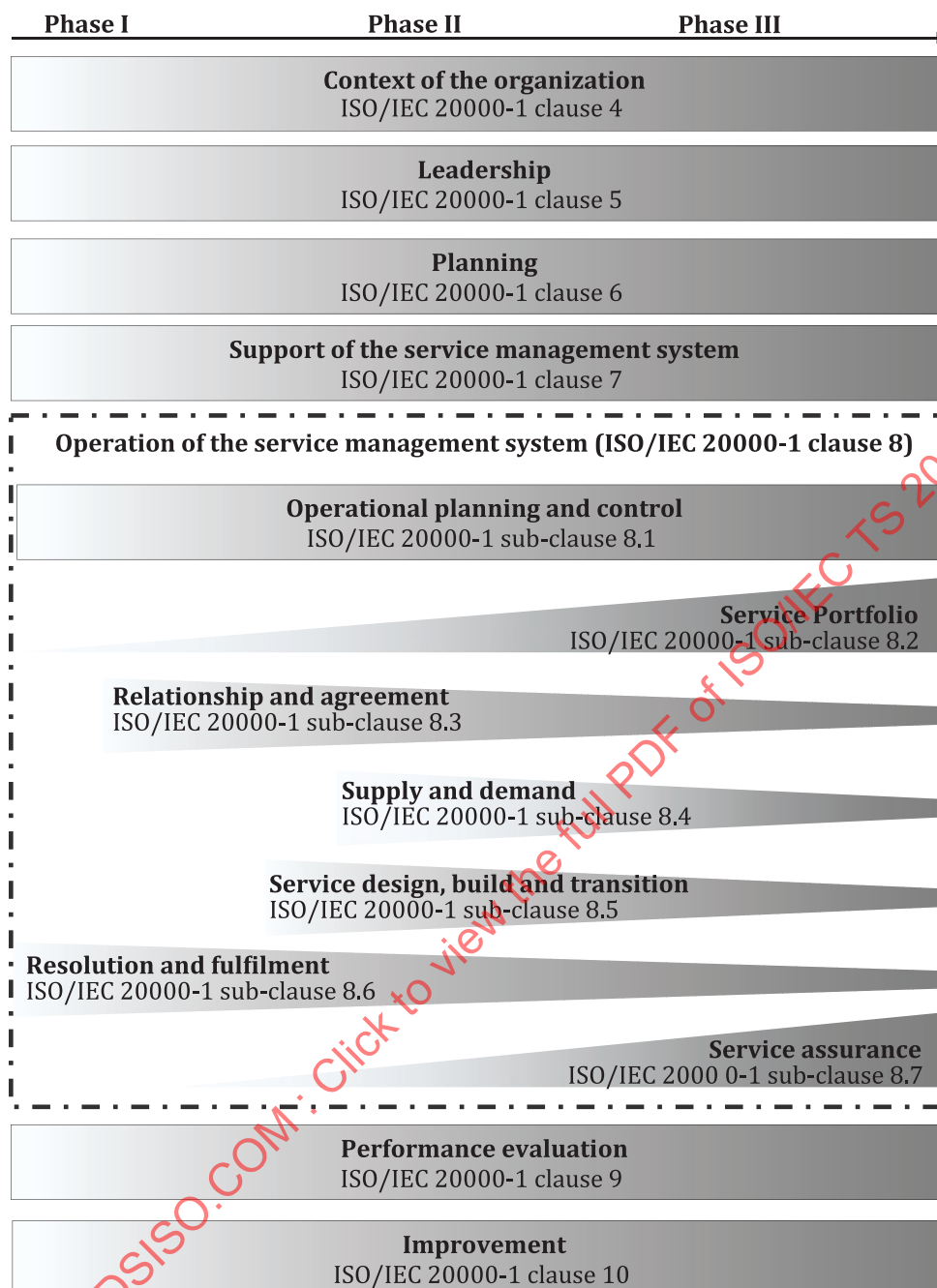
Relationship and agreement processes whose implementation has direct and immediate impact on the organization's communication with customers and other external interested parties are in the second priority level. At the third level of priority, implementation of service design, build and transition processes enabling changes in service provision is suggested. Concurrently, it is a good idea for the

organization to start implementing supply and demand processes to manage demand and capacity along with budgeting and accounting for services.

Implementation and improvement of operational planning and control processes are started from Phase I and continue in all phases until the end. Implementation of the service assurance processes starts with a minimal set of controls and measures and matures as each process is implemented, as illustrated in [Figure 3](#). Implementation of the service portfolio processes starts with designing an initial and incomplete service catalogue and is improved during subsequent phases.

The organization can continually improve the suitability, adequacy and effectiveness of the SMS processes, services and other elements. For further guidance on implementing the processes, refer to ISO/IEC 20000-2.

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NOTE In Figure 3, a shaded rectangle is used to show an organization is consistently improving its SMS across all phases. A triangle indicates which phase will support the majority of the activities within the named subclause.

Figure 3 — A subset of processes approach

A major risk in a phased implementation of an SMS is the loss of a holistic approach to management. When breaking the implementation down into phases, each one is being implemented separately, not necessarily under the same management and with the same team. Organizations need to be aware of the dangers of a silo mentality where existing problems are simply shifted to somewhere else in the organization or bigger ones are created later.

When organizations plan to implement a subset of processes of an SMS in phases, it is necessary to follow two rules:

- a) Rule 1: Define the objectives and the scope of each phase by putting a boundary around the processes and related elements so that through their interactions the subsystem of the SMS is established. Some examples of related elements are the process interactions, policies, plans, resources, authority levels, competence, information, performance indicators and measurement methods. The requirements of these elements are defined in ISO/IEC 20000-1:2018, Clauses 4 to 10.
- b) Rule 2: In forming each phase, some relationships or dependencies, between SMS elements, can be missing. To mitigate the risk of losing a systemic approach, an organization should define the interfaces covering interactions across phase boundaries, between phase elements and other SMS elements.

5.2.3 Approach 2: Evolution of the SMS at three levels

In this approach, the SMS is established, implemented and improved at three levels of maturity, each reached in a separate phase. This approach can be also used when an organization is implementing a subset of processes. The maturity characteristics of an organization after reaching each level are described in [Table 1](#). Organizations should ensure that the previous improvements are sustained when implementing the next level. For example, an organization should not try to achieve Level III without doing the work in Level II. The Levels are as follows:

- a) Level I: In this level, management support is obtained. Each process performs and achieves its intended purpose. Although the process purpose is achieved, the process is not implemented in a managed manner (e.g. planned, monitored, controlled and improved). Process activities or procedures are performed inconsistently across the organization. There is a tendency that processes are not followed by people involved in the operation of them, especially in a time of stress or crisis.
- b) Level II: In this level, management support is established. Interested parties are defined and involved in the process activities. The defined processes are formally implemented, managed and can be improved. The processes are executed according to applicable management policies and plans. Performance criteria for each process are defined. Processes are followed and operated under controlled conditions, even in a time of stress or crisis.
- c) Level III: In this level, management support is institutionalized. The role of each process and its effects on the performance of the whole SMS is established, managed and improved. Any conflicts are identified and resolved in a systematic way. The processes are institutionalized. Process improvement is based on quantitative and qualitative assessment. Management of processes is proactive using an understanding of the interrelationships of the process activities, inputs, outputs and measures.

Table 1 — Maturity level definitions

Key elements of an SMS	Level I	Level II	Level III
Management support	Management support is obtained by approval of a business case.	Management support is established	Management support is institutionalized.
Interested parties	Only some interested parties are identified and involved in the process activities.	Interested parties are defined and involved in the process activities as relevant.	Interested parties are defined and involved in the process activities as relevant.
Process	Each process performs and achieves its intended purpose. Although the process purpose is achieved, the process is not implemented in a managed manner (planned, monitored, controlled, improved). Process activities or procedures are performed inconsistently across the organization. There is a tendency that processes are not followed by people involved in the operation of them, especially in a time of stress or crisis.	The defined processes are formally implemented, managed and can be improved. The processes are executed according to applicable management policies and plans. The inputs and outputs of each process are monitored, controlled and maintained. Performance criteria for each process are defined. Processes are followed and operated under controlled conditions, even in a time of stress or crisis.	Process improvement is based on quantitative and qualitative assessments. The role of each process and its effects on the performance of the whole SMS are defined, managed and improved. Any conflicts are identified and resolved in a systematic way. The processes are institutionalized. Management of processes is proactive using an understanding of the interrelationships of process activities, inputs, outputs and measures.
Process interaction	Interaction between processes is defined on a one-to-one basis regardless of their impacts on the whole SMS. Process responsibilities and required authority levels are defined and applied. There can be conflict when the same staff have different roles in different processes, or the level of authority is not appropriate or is unclear for decision-making.	Interactions between processes are limited and do not take into account the impact on all processes. For example, a service outage is handled only between Incident and Problem management with no notification to service level management. Process responsibilities and required authority levels are defined, applied and support decision-making.	Processes and their interactions are improved based on the organization's policies, strategic direction and objectives. The achievement of process improvements and their interactions is reviewed on a regular basis. Process responsibilities and the required authority levels are defined, applied and support decision-making.
Process management	Processes, their interactions, policies, plans, resources and competence are established but are not monitored and maintained.	Processes, their interactions, policies, plans, resources and competence are established, monitored and maintained.	Processes, their interactions, policies, plans, resources and competence are established, monitored, maintained and improved.
Management	Management in each operational area separately directs and supports personnel in their areas of responsibility and contributes to the effectiveness of the SMS and the services. Management directions cannot be aligned with those of top management. There can be conflict between management directions in different operational areas.	Management in each operational area directs and supports personnel in their areas of responsibility and contributes to the effectiveness of the SMS and services, aligned with top management's directions. There can be some conflict with other operational areas.	Management in each operational area directs and supports personnel in their areas of responsibility and contributes to the effectiveness of the SMS and services. Their actions are aligned with top management's direction and are consistent with management directions in other operational areas.

Table 1 (continued)

Key elements of an SMS	Level I	Level II	Level III
Relationships	Relationships with other parties involved in the service lifecycle are established but are not maintained and can lapse. The relationships are seen as transient and the organization sees no value in developing them.	Ongoing relationships with other parties involved in the service lifecycle are established but only maintained in an ad hoc manner. There is a limited understanding regarding the value of these relationships.	Ongoing relationships with other parties involved in the service lifecycle are established and maintained systematically. There is a good working relationship between the organization and other parties. There are regular communications to meet the requirements of the organization's customers, operate the SMS and provide services effectively.
Requirement	The requirements of customers and other interested parties for each process are determined and met but due to conflicts in the requirements of different processes, the overall intended outcome is not achieved.	The requirements of customers and other interested parties for each process are determined and met. The overall intended outcome is achieved, but with limited possibilities for improvements.	The requirements of customers and other interested parties are met and the operational SMS provides intended outcomes. The organization determines what future requirements customers may have.
Risk	Risks to service management and the services are identified but cannot be managed or revised. Process risks are identified but there is no agreed rule for monitoring and addressing them.	The related risks to service management and services are identified, managed and updated. Existing process risks are identified and managed, but new risks are not.	The related risks to service management and services are identified, managed and updated. Existing and new process risks are identified and managed.
Communication	Communication methods or channels with customers and other interested parties are defined separately for each process or individual. The flow of information is not maintained regularly between the organization and interested parties. Voice of the customer can be lost throughout the organization. Feedback cannot be received in a timely manner.	Communication methods or channels with customers and other interested parties are defined separately for each process and followed by all personnel who have roles in the process. The flow of information is maintained regularly between the organization and interested parties. Timely feedback is received.	Communication methods or channels with customers and other interested parties are defined and facilitate continual communication. The flow of information is maintained regularly between the organization and the interested parties. A feedback mechanism is in place to address new issues proactively.
Policy and Objective	Required policies and objectives are defined but cannot be aligned with the organization's strategic direction or objectives. They can be contradictory.	Required policies and objectives are defined and compatible but cannot be aligned with the organization's strategic direction and objectives.	Required policies and objectives are defined and are compatible and aligned with the organization's strategic direction and objectives.
Resource	The use of resources is unplanned.	Efficient and effective use of resources is defined and supported.	Efficient and effective use of resources is defined, systematically reviewed and maintained.

Table 1 (continued)

Key elements of an SMS	Level I	Level II	Level III
Responsibility	Personnel meet their responsibilities through their specific roles in each process but are not integrated with the activities of other personnel and do not support achievement of objectives.	Personnel meet their responsibilities through their specific roles in each process. These are integrated with the activities of other personnel in the process but are not integrated with the activities of other personnel in other processes and do not support achievement of objectives.	Personnel meet their responsibilities through their specific roles in each process. These are integrated with the activities of other personnel in the process or other processes and support achievement of objectives.
Engagement and commitment	Personnel are engaged and committed to achieving service management policies, objectives and requirements based only on their understanding of them. There is no shared understanding. This can result in lack of commitment of the whole SMS to achieving service management objectives and policies.	Personnel are engaged and committed to achieving service management policies, objectives and requirements based on a limited shared understanding of them. This can result in a lack of commitment of the whole SMS to achieving service management objectives and policies.	Personnel are engaged and committed to achieving service management policies, objectives and requirements based on a shared understanding of them. This results in a commitment of the whole SMS to achieving service management objectives and policies.
Personnel	Competent and engaged personnel are assigned to each process. They can have different, or even conflicting, responsibilities. Competence development is provided in an informal or ad hoc manner.	Competent and engaged personnel are assigned to each process. The risks of not having sufficient resources in a timely manner are assessed/treated, monitored and updated in each process separately. Conflicts can happen when personnel have different responsibilities in different processes. Competence development is provided and maintained within the scope of each process.	Competent and engaged personnel are assigned to processes. The assignment is systematically aligned with the SMS objectives and policies. Management of resources is systematically implemented, integrated across the SMS and aligned with the organization's strategic direction and policies. Competence development is provided and maintained in a systematic and integrated way. Reviews and evaluations of the effectiveness of the SMS and services ensure that personal competence fully supports the achievement of the SMS objectives and policies.

Table 1 (continued)

Key elements of an SMS	Level I	Level II	Level III
Learning	Learning is on an individual basis. Knowledge sharing happens by chance based on individual methods and desires. Lessons are often learned as a result of complaints or in response to identified concerns.	Learning is generated in a reactive way from the systematic analysis of identified concerns and other information. Information and knowledge are shared, but still in a reactive manner. Important information for each process is identified, documented, protected, maintained and distributed throughout the process activities.	Important information and organizational knowledge are identified, documented, protected, maintained and distributed effectively throughout the service life cycle. Processes are implemented to determine knowledge gaps and the necessary resources for learning and filling the gaps are provided. Networking, connectivity and interactivity and any methods for sharing knowledge and lessons learned are supported effectively by top management. Top management supports the identification and sharing of best practices.
Performance indicator	Only basic performance indicators are defined and evaluated for each process or service management element. The evaluation results are sometimes in conflict and do not provide an integrated view of data and appropriate knowledge for decision-making. The effectiveness of service management and the services cannot be evaluated or is evaluated in an ad hoc manner.	The effectiveness of each process is individually measured and acted upon, if necessary. The evaluation results support decision-making. Reviews are conducted to assess the performance of the process and assess progress of a process against its plans, policies and objectives. Relevant improvement actions are assessed during reviews. Basic improvement procedures, including corrections and corrective actions are in place, based on complaints or suggestions from interested parties.	The effectiveness of processes is measured across the system and acted upon, if necessary. The evaluation results support decision-making. Systematic reviews of measurable indicators and related objectives are conducted at periodic intervals. The reviews assess progress in the achievement of SMS policies, objectives and plans and the performance and effectiveness of the SMS and the services. Relevant improvement actions are assessed during reviews. Top management and appropriate levels and functions of the organization contribute to reviews. The requirements of customers and other interested parties are taken into account when selecting measurable indicators. Improvement reports providing an integrated view of results are produced and communicated with related customers and interested parties.

Table 1 (continued)

Key elements of an SMS	Level I	Level II	Level III
Review and internal audit	Reviews and internal audits are performed reactively in response to identified concerns or customer complaints. They do not support continual improvement of activities and objectives. There is no defined method of continual improvement to evaluate the results and define improvement objectives. Improvement activities are done in an informal or ad hoc manner. Improvement reports are produced and communicated but can include distortions of data.	Internal audits for implemented processes are performed on a regular basis. Collected data are used to review the management of processes. Audit results are reported to relevant management. Objectives for the improvement of processes are provided. Improvement activities are identified for each process. Process improvement reports are produced and communicated to related interested parties.	Internal audits are performed at planned intervals, by competent personnel who are not involved in the activity being assessed, according to an audit plan. Internal audits identify concerns, nonconformities and opportunities for improvement in the SMS and the services. They also monitor to progress in addressing previously identified nonconformities. Audit results are reported to relevant management. Objectives for the improvement of services and processes are provided. Continual improvement includes relevant interested parties. Review and audit results are used by the organization to understand the need to improve its policies, strategic direction or objectives to support the SMS or service improvements. Processes for determining and addressing external and internal issues are in place.
External and internal issues	External and internal issues relevant to service management or services are defined in an ad hoc manner and are not monitored.	Processes for determining and addressing external and internal issues are in place.	Identified innovations and emergent technologies, or other opportunities for improvement, are evaluated against service management objectives to make decisions on their approval or rejection. Risks and opportunities associated with identified issues are considered.

5.3 Initiation

5.3.1 Business case development

A successful implementation depends on commitment by top management to assign the necessary resources (time, budget, people), and to support the improvement initiatives visibly and consistently. This can be achieved by the development of a realistic business case which demonstrates support for achievement of overall objectives.

Developing an effective business case assures top management that implementing an SMS is both necessary and feasible. It justifies that the necessary resources will contribute effectively to supporting the organization in achieving its objectives. The business case should be based on clearly defined, measurable criteria, in line with the policies, structures and procedures of the organization. The business case should include:

- a) a description of the business needs and drivers identified in [subclause 5.1](#);
- b) the short-term and long-term intended outcomes and benefits for the organization along with their importance, such as improved services, changes to workloads, customer and personnel satisfaction and cost savings;
- c) the proposed scope of the SMS;
- d) an outline of necessary steps to move the organization closer to achieve stated outcomes and benefits;
- e) the constraints and assumptions affecting the SMS or its implementation;
- f) costs, including internal and external resources;
- g) a risk assessment and recommendations for risk management covering organizational, financial and technical risks;
- h) the resources needed for SMS establishment, implementation, maintenance and continual improvement;
- i) a description of how the costs and benefits of the implemented SMS should be evaluated;
- j) recommendations on formal and independent conformity assessment with associated costs and benefits;
- k) timeframes and schedule;
- l) the impact on customers and other interested parties;
- m) the proposed terms of reference;
- n) the project sponsorship and project governance.

The business case should be realistic without overstating the benefits and capabilities of an SMS. Claims such as opening new markets, improving hardware/software performance, monitoring services profitability, managing service innovation or relieving organization's top management from service performance accountability cannot be realized solely through implementation of an SMS.

5.3.2 Baseline assessment/gap analysis

An organization planning to implement or improve an SMS needs to understand the current state of its service management capability compared to the requirements of ISO/IEC 20000-1 for the defined scope of the SMS.

A baseline assessment can be performed as a self-assessment, an internal audit, or by using external resources. It is important to bring as much independence as possible to this activity to ensure findings and evaluation are objective. Reports from previous audits can be used as a starting point.

The baseline assessment may be as wide as possible across interested parties and should cover the proposed scope of implementation defined in the business case. In performing the assessment, the following should be taken into account:

- a) existing documents and records;
- b) results of previous service reviews, internal audits or other management reviews;
- c) workload characteristics;
- d) breaches of service level agreement or contracts;
- e) measurements of service and process performance;
- f) recent or current service improvement plans;
- g) number, skills and competence of available staff;
- h) relevant statutory and regulatory requirements and contractual obligations;
- i) results of customer satisfaction surveys and any customer complaints;
- j) other management systems in place.

When the assessment is completed, the report should be available to interested parties for discussion and a decision about next steps. The decision can be to do nothing, delay any actions or implement some or all of the improvement opportunities.

If possible during the assessment, record the state of the organization with a series of benchmarks to show later the implementation benefits and how far the organization has progressed. Some sample key performance indicators (KPIs) are:

- time to market;
- customer satisfaction;
- breaches of commitments;
- on-time service delivery;
- service down time;
- employee satisfaction;
- external/internal failure costs.

5.3.3 Set target state

Based on an understanding of the current state and the improvement opportunities, a target state is defined and the appropriate approach for the journey from current to target state is selected.

The target can be:

- a) an implementation of only one or a group of processes;
- b) an implementation of a whole SMS in one project to achieve conformity with the requirements specified in ISO/IEC 20000-1;
- c) a multi-phased project for implementing an SMS.

In this step, the target objectives, along with critical success factors (CSFs) and KPIs, can be set. Defining a clear target state sets common expectations of the benefits of implementation for the whole organization and interested parties. If improvement is not feasible, for example because of policy implications or other limitations, top management should be informed and asked to consider whether policy changes or relaxation of some limitations are needed.

The organization can already have one or more of the processes defined in ISO/IEC 20000-1 in place, with varying levels of conformity with the requirements of ISO/IEC 20000-1. In order to demonstrate benefits quickly the organization can decide to improve these processes before implementing new processes. No organization is ineffective in all areas of operation, so it is better to start with what exists rather than to start from zero.

5.4 Planning

Based on an understanding of the current and target states, a plan for a specific path from current state to target state, can be developed and agreed upon. The plan should define at least:

- a) the objectives, scope and the anticipated results;
- b) the most appropriate approach for achieving the objectives;
- c) the processes that will be implemented or improved and their interfaces;
- d) the risks and the methods used to assess and treat them;
- e) the required resources such as personnel, information and infrastructure;
- f) the structures, roles and responsibilities, authority levels and competence required for effective:
 - 1) project implementation;
 - 2) project governance;
 - 3) review of the project outputs and results;
 - 4) monitoring and sustaining the achieved results after implementation.
- g) the requirements and methods for:
 - 1) monitoring and controlling the implementation progress;
 - 2) reviewing the project activities and results;
 - 3) reporting and communicating;
 - 4) ensuring continued performance of the existing parts of an SMS.
- h) the awareness, training and engagement requirements;
- i) the budgetary requirements.

The organization will decide whether or not the project team will also have responsibilities for maintaining the achieved results and ongoing post-implementation operations. Each approach has benefits and issues. Where project team members will have operational responsibilities, user input to the project is direct and there can be more commitment to ensure the project succeeds. Where more independence, and possibly objectivity, is required, separation of responsibilities between the project and operations may be needed.

Key to the success will be effective communication with interested parties, delivered at the appropriate time with an appropriate level of detail.

5.5 Implementation

The implementation journey is made by acting upon the plan. It is important to remain open to change throughout this journey. If a change happens during the implementation period, there needs to be a continual focus on measuring progress against the plan and managing risks. Once this step is completed, the organization will achieve the target state. This becomes the new current state of the SMS.

5.6 Evaluation

Whatever approach or methodology the organization chooses for the implementation of an SMS, evaluation and feedback are important during implementation and post-implementation. Both the progress towards and relevance of, the target state needs to be continually evaluated and reported. Interested parties should be informed of the results. If any changes in the plan or objectives are necessary, the plan is revised and additional actions are undertaken.

If the implementation objectives are not achieved, it is necessary to analyse the unmet objectives and identify their causes with agreed actions. Lessons learned should be maintained, communicated and included in future plans, as necessary.

5.7 Future action

After implementation, it is important to ensure that the implementation results are embedded in daily work practices and behaviours throughout the organization. Over time, opportunities for future improvements can be identified. The activities in this step ensure the improvements and changed behaviours are not at risk of reversion and can be built on for future improvements.

This step helps ensure that improvements will not remain isolated, that progress is not lost over time and that future support for continual improvement is achieved.

6 Implementation challenges

Organizations wishing to implement an SMS will potentially face a variety of challenges. The challenges are what brings the organization closer to its capability limitations. Depending on the impact of these challenges and the organization's capability to address them, the organization should make a decision to continue, modify, or even stop the implementation.

If a challenge is identified as a risk, mitigation methods can be useful. [Table 2](#) illustrates some of those challenges and how they can be overcome.

Table 2 — Implementation challenges

Challenge title	Challenge definition	Key considerations	Related clauses or subclauses in ISO/IEC 20000-1:2018
1) Initial support for the implementation of an SMS across the organization is not strong	Internal or external drivers for implementing an SMS and the benefits which it brings to the organization, do not resonate with the decision-makers to start the implementation.	Scan the environment and organization to determine how service management affects the ability of the organization to achieve its purpose. Consider statutory and regulatory requirements. Encourage those who cannot approve to join and contribute to the planning and implementation. It is hard to disagree or not support something that has been personally developed. Sit down with business decision-makers to determine service management purpose, policies and organization risks to achieve the purpose. With the same group, complete an impact analysis to get an understanding of factors that can impact the organization and prevent it from achieving the purpose Begin an organization-wide communication campaign around the defined purpose Develop an effective business case, especially if organizational leadership has an unclear understanding of the benefits of implementing an SMS. There can be good leadership within the organization, but their opinions cannot be heard. Ensure that this leadership is connected to the business decision-makers. Ensure top management visibly demonstrates support for and leadership in the SMS implementation. For example, through written and verbal communication, resource provisioning, development of service management objectives and policy, empowerment of management.	Clauses 4, 6 Clause 6, subclause 7.3 Clauses 4, 5, 6 Subclauses 7.3, 7.4 Subclause 5.1 Clauses 4, 5, 6 Clause 5

Table 2 (continued)

Challenge title	Challenge definition	Key considerations	Related clauses or subclauses in ISO/IEC 20000-1:2018
2. Drivers are strong at the beginning but change during implementation	The organization changes priorities during implementation, the leadership does not actively communicate its commitment to implement the SMS according to the implementation plan. Staff are no longer actively involved in the implementation.	Ensure the business case developed at the beginning remains valid. Ensure that the SMS implementation plan developed at the beginning remains valid and ensure it is maintained. Ensure that appropriate levels of authority are assigned for making decisions related to the implementation. Ensure that the relevant management roles demonstrate their leadership. Engage management to be more visible and communicative to encourage active involvement. Clarify the gap between the state of service management in the organization and what leadership and interested parties think it is. Answer the following questions to clearly understand the amount of change in the organization: Is implementing service management still a top priority? Is there 'change fatigue' (e.g. too many changes consistently happening?) Are all changes needed? Organizational priorities (such as digital transformation, service delivery, customer experience) should be clearly stated and readily available across the whole organization.	Clauses 4, 5, 6 Clauses 6, 7, 9, 10 Subclauses 8.1, 8.2 Subclauses 5.3, 7.1, 7.2 Clause 5, subclause 7.2 Clauses 4, 5, 6 Clauses 4, 5, 6 Clauses 5, 6, 7.4, 7.5

Table 2 (continued)

Challenge title	Challenge definition	Key considerations	Related clauses or subclauses in ISO/IEC 20000-1:2018
3. Top management buy-in issues	Top management play a crucial role in getting the rest of the organization on board. Lack of commitment to, or interest in, the implementation by top management reflects on general staff, who in turn can be, or become, uncommitted. If top management does not provide enough resources for the implementation, issues encountered during the project will remain unresolved.	Be aware of the link between lack of top management commitment to more general cultural issues in the organization.	Clauses 5, 6
		Start the project by ensuring top management commitment; do not proceed without this commitment.	Clauses 4, 5, 6
		Convince top management by pointing out the potential business benefits of implementing an SMS, such as cost reduction, revenue increase and customer satisfaction improvements.	Clauses 4, 5, 6
		Ensure that resources needed for the implementation of an SMS are approved and are assigned to the implementation.	Subclauses 5.1, 6.2.2.2, 6.3, 7.1
		Establish, maintain and improve effective communication channels with customers and other interested parties.	Subclause 7.4
		Report to top management on the performance of the SMS and its improvement against KPIs and agreed requirements.	Clause 9 Subclauses 5.3, 6.3, 7.4

Table 2 (continued)

Challenge title	Challenge definition	Key considerations	Related clauses or subclauses in ISO/IEC 20000-1:2018
4. Cultural resistance	Some staff view change as a threat and can be resistant to it. Some leaders do not support, or actively communicate their commitment to change. Service management implementation is unsuccessful because of failure to deal with resistance to change.	Ensure everyone understands the organization's purpose in implementing service management through effective, open and clear communication, which creates a sense of unity and shared purpose. Use a variety of methods to encourage people to be involved in this change (implementing service management) and connect to it personally and emotionally. Explain the benefits, for example, answer the common question, "What's in it for me?" Provide every member of the organization with appropriate education, training and the required skills. Lead and coach people by example and provide freedom to act with responsibility and accountability. Train leaders in change management, how to promote benefits and minimize the effects of issues. Decide how this change will be measured for success or failure and share the information with all staff. Prepare, review and update a communication plan as the implementation progresses. Reskill staff who can be moved out of their roles. Implementing service management is an organizational change which can create confusion and resistance among those impacted. Use the principles and practices of organizational change management to assess and overcome the resistance. Ensure management support is used across the organization to help overcome resistance from shadow IT departments.	Subclauses 5.1 h), 7.3, 7.4 Subclauses 5.1 j), l), 7.3, 7.4 Subclauses 5.1 g), 6.2.2, 6.3 e), 7.1, 7.2, 7.3, 7.4 Clause 7 Clause 7 Clause 7 Clause 7 Clause 7 Clause 6 Terms – 3.1.21 Clauses 4, 5, 6, 8.4.1