SFP International Quality Institute

Global Certification Programs

ISO/IEC 20000-1:2018

IT Service Management System

Full Course Content – Units 1 to 5

Pure Online Certificate Short-Course

Course Code	ISO/IEC 20000-1:2018 – ITSM
Format	Pure Online – Fully Self-Paced
Duration	Intensive 5-Unit Short Course (recommended 3–4 hours per unit)
Level	Intermediate (Foundation → Implementer / Internal Auditor readiness)
Institution	SFP International Quality Institute
Certificate	Certificate of Completion (upon successful completion of examination)

Course Overview

This course develops a thorough understanding of IT service management and the requirements of ISO/IEC 20000-1:2018 for establishing, implementing, maintaining and continually improving a Service Management System (SMS). Learners will explore the relationship between ISO/IEC 20000-1 and ITIL best-practice guidance, the structure of the standard, the core operational processes that support service delivery, performance evaluation, continual improvement, and the practical steps required to prepare for implementation and certification. Content is synthesised from the ISO/IEC 20000 Handbook (ISO/IEC JTC 1/SC 40), BS ISO/IEC 20000-1:2018, and ITIL Continual Service Improvement guidance, and is designed to support approximately 15–20 hours of self-paced study across five units.

Learning Pathway

- Unit 1 – Foundations of IT Service Management, the ISO/IEC 20000 series, the value of an SMS, and the relationship with ITIL
- Unit 2 – Organisational context, leadership, planning and support of the SMS (Clauses 4–7)
- Unit 3 – Operation of the SMS – detailed treatment of the core service management processes (Clause 8)
- Unit 4 – Performance evaluation, internal audit, management review and continual improvement (Clauses 9–10), including the ITIL 7-Step Improvement Process
- Unit 5 – Implementation roadmap, gap analysis, certification preparation, and alignment with Lean, Agile and DevOps approaches

Each unit includes explanatory text, practical examples, key definitions, and a practical activity. A final examination assesses knowledge across all five units.

UNIT 1 – Foundations of IT Service Management, the ISO/IEC 20000 Series and the Value of an SMS

1.1 What is Service Management?

Service management is a set of specialised organisational capabilities for providing value to customers in the form of services. In the context of information technology, these capabilities include the processes, functions, roles, tools and information needed to design, transition, deliver and improve services that meet agreed requirements. A service is a means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific costs and risks. The value of a service is created through the combination of utility (fitness for purpose – what the service does) and warranty (fitness for use – how the service is delivered in terms of availability, capacity, continuity and security).

Organisations that provide IT services, whether internally or as external providers, face increasing pressure to demonstrate that their services are reliable, cost-effective and aligned with business needs. Formal service management provides a structured way to meet these expectations. It moves the organisation away from purely reactive, technology-centric operations towards a customer- and outcome-focused approach in which services are planned, measured and improved in a controlled manner.

(ITIL Continual Service Improvement; ISO/IEC 20000 Handbook)

1.2 What is a Service Management System (SMS)?

A Service Management System (SMS) is a management system that directs and controls the service management activities of an organisation. ISO/IEC 20000-1 specifies the requirements for an organisation to establish, implement, maintain and continually improve an SMS. The requirements cover the planning, design, transition, delivery and improvement of services to meet service requirements and to deliver value to customers and users.

An SMS is not merely a collection of processes. It is an integrated system that includes policy, objectives, processes, documented information, resources, roles and responsibilities, and mechanisms for monitoring, measurement, analysis, evaluation and improvement. When effectively implemented, the SMS enables the organisation to manage the full lifecycle of its services in a consistent and auditable way.

(BS ISO/IEC 20000-1:2018)

1.3 The ISO/IEC 20000 Series

The ISO/IEC 20000 series is the internationally recognised set of standards for IT service management. The core requirements standard is ISO/IEC 20000-1. Supporting parts of the series provide guidance on the application of the SMS, the relationship with other frameworks (including ITIL), assessment and auditing, and implementation considerations. The 2018 edition of ISO/IEC 20000-1 was revised to align with the high-level structure (Annex SL) used by other ISO management system standards such as ISO 9001 (quality) and ISO/IEC 27001 (information security). This alignment makes it significantly easier for organisations to integrate their SMS with other management systems and to adopt a consistent approach to policy, risk, documented information, internal audit and improvement.

The standard is intended for use by organisations of any size, including small-to-medium sized enterprises (SMEs) as well as large internal IT departments and external service providers. It is applicable whether services are delivered to internal customers, external customers, or both. Certification to ISO/IEC 20000-1 is awarded by accredited certification

bodies following successful Stage 1 and Stage 2 audits and is increasingly used as evidence of competence in competitive tendering and customer assurance processes.

(ISO/IEC 20000 Handbook – Overview of the ISO/IEC 20000 series; BS ISO/IEC 20000-1:2018)

1.4 Relationship with ITIL and the Service Lifecycle

ITIL (Information Technology Infrastructure Library) is a widely adopted framework of best-practice guidance for IT service management. While ISO/IEC 20000-1 provides the auditable requirements for an SMS, ITIL provides detailed guidance on how to design, implement and operate the processes that support those requirements. Many organisations use ITIL practices as the practical method for achieving and maintaining conformity with ISO/IEC 20000-1.

The ITIL core consists of five publications that map to the service lifecycle:

- Service Strategy – defining the perspective, position, plans and patterns that a service provider needs to execute to meet business outcomes and to create value for customers;
- Service Design – designing services, processes, technology architectures and measurement systems so that new or changed services can be introduced into the live environment effectively;
- Service Transition – planning and managing the build, test and deployment of releases so that the integrity of services is protected and the correct components are released;
- Service Operation – coordinating and carrying out the activities and processes required to deliver and manage services at agreed levels, including incident, problem, request and access management;
- Continual Service Improvement – creating and maintaining value for customers through better design, introduction and operation of services, using a structured improvement approach.

Understanding this lifecycle helps learners see how the requirements of ISO/IEC 20000-1 (particularly Clause 8 on operation of the SMS and Clauses 9–10 on performance evaluation and improvement) map onto practical day-to-day service management activities.

(ITIL V3 / 2011 Continual Service Improvement and related core publications)

1.5 The Value of Implementing a Service Management System

Implementing an SMS based on ISO/IEC 20000-1 delivers value in several dimensions. First, it provides a structured way to demonstrate the ability to design, transition, deliver and improve services that meet agreed requirements. Second, it supports alignment of IT services with business strategy and customer needs, reducing the risk of delivering technology that does not support business outcomes. Third, it improves service quality, reliability and customer satisfaction through defined processes, measurement and continual improvement. Fourth, it provides a framework for managing risk related to services, suppliers and changes. Fifth, it creates a basis for independent certification that can enhance market credibility, support bids and tenders, and increase customer confidence.

Organisations that have implemented ISO/IEC 20000-1 often report clearer accountability, better visibility of service performance, more controlled change activity, faster resolution of incidents, and a more systematic approach to learning from problems and improvement opportunities. The standard is therefore both a governance and an operational improvement tool.

(ISO/IEC 20000 Handbook – The value of implementing service management)

1.6 Structure of ISO/IEC 20000-1:2018

Following the common high-level structure (Annex SL), the main clauses of ISO/IEC 20000-1:2018 are:

- Clause 4 – Context of the organisation (understanding the organisation and its context, understanding the needs and expectations of interested parties, determining the scope of the SMS, and the SMS itself);
- Clause 5 – Leadership (leadership and commitment, service management policy, and organisational roles, responsibilities and authorities);
- Clause 6 – Planning (actions to address risks and opportunities, service management objectives and planning to achieve them, and plan the SMS);
- Clause 7 – Support of the SMS (resources, competence, awareness, communication, and documented information);
- Clause 8 – Operation of the SMS (operational planning and control, service delivery, relationship and agreement, supply and demand, service design/build/transition, resolution and fulfilment, service assurance, and the detailed process requirements);
- Clause 9 – Performance evaluation (monitoring, measurement, analysis and evaluation, internal audit, and management review);
- Clause 10 – Improvement (nonconformity and corrective action, and continual improvement).

Clauses 4–7 establish the foundation of the management system. Clause 8 contains the bulk of the service-specific operational requirements. Clauses 9 and 10 close the loop of measurement, review and improvement. This structure supports integration with other management system standards and provides a clear framework for establishing, implementing, maintaining and improving the SMS.

(BS ISO/IEC 20000-1:2018; ISO/IEC 20000 Handbook)

Key takeaway – Unit 1
ISO/IEC 20000-1 provides the requirements for an auditable Service Management System. ITIL provides detailed best-practice guidance that organisations commonly use to implement and improve the processes that support those requirements. The standard is applicable to organisations of any size and can be integrated with other ISO management systems through the common high-level structure.

Practical Activity – Unit 1: Map the five ITIL lifecycle stages to the main clauses of ISO/IEC 20000-1:2018. Identify three concrete business benefits your organisation (or a case-study organisation) could gain from implementing a formal SMS. Note any current gaps between reactive IT support and a managed service approach.

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UNIT 2 – Organisational Context, Leadership, Planning and Support of the SMS (Clauses 4–7)

2.1 Context of the Organisation (Clause 4)

Clause 4 requires the organisation to determine the external and internal issues that are relevant to its purpose and that affect its ability to achieve the intended results of its SMS. External issues may include regulatory requirements, market conditions, technology trends, customer expectations and the competitive landscape. Internal issues may include organisational culture, existing processes, skills, tools, organisational structure and the current maturity of service management practices.

The organisation shall also determine the interested parties that are relevant to the SMS and the requirements of those interested parties. Interested parties typically include customers, users, suppliers and partners, regulators, employees, owners and, in some cases, the wider community. Understanding these parties and their requirements ensures that the SMS is designed to deliver value where it matters most and that conflicting requirements are identified and managed.

The scope of the SMS shall be determined and made available as documented information. The scope shall consider the external and internal issues, the requirements of interested parties, and the services delivered. A clear scope statement is essential for certification and for internal clarity about what is (and is not) covered by the SMS. Organisations may choose to include all services or a defined subset; the scope must be realistic and defensible.

(BS ISO/IEC 20000-1:2018, Clause 4)

2.2 Leadership and Service Management Policy (Clause 5)

Top management shall demonstrate leadership and commitment with respect to the SMS. This includes ensuring that the service management policy and objectives are established and are compatible with the strategic direction of the organisation; ensuring the integration of the SMS requirements into the organisation's business processes; ensuring that the resources needed for the SMS are available; communicating the importance of effective service management and of conforming to the SMS requirements; ensuring that the SMS achieves its intended results; directing and supporting persons to contribute to the effectiveness of the SMS; promoting continual improvement; and supporting other relevant management roles.

Top management shall establish, implement and maintain a service management policy that is appropriate to the purpose of the organisation, provides a framework for setting service management objectives, includes a commitment to satisfy applicable requirements, and includes a commitment to continual improvement of the SMS. The policy shall be available as documented information, be communicated within the organisation, and be available to interested parties as appropriate. A well-written policy is short, memorable and actionable; it sets the tone for the entire SMS.

Top management shall also ensure that the responsibilities and authorities for relevant roles are assigned and communicated. This includes responsibility and authority for ensuring that the SMS conforms to the requirements of the standard and for reporting on the performance of the SMS to top management.

(BS ISO/IEC 20000-1:2018, Clause 5)

2.3 Planning (Clause 6)

When planning for the SMS, the organisation shall consider the issues referred to in Clause 4 and the requirements of interested parties, and shall determine the risks and opportunities that need to be addressed. The purpose is to give assurance that the SMS can achieve its intended results, to enhance desirable effects, to prevent or reduce undesired

effects, and to achieve continual improvement. Actions to address risks and opportunities shall be planned and integrated into the SMS processes.

Service management objectives shall be established at relevant functions and levels. Objectives shall be consistent with the service management policy, be measurable (where practicable), take into account applicable requirements, be monitored, be communicated, and be updated as appropriate. Planning to achieve the objectives includes determining what will be done, what resources will be required, who will be responsible, when it will be completed, and how the results will be evaluated.

The organisation shall also plan changes to the SMS in a controlled manner. Changes may arise from improvement initiatives, organisational restructuring, new services, technology refresh or external factors. Controlled planning of change protects the integrity of the SMS while allowing necessary evolution.

(BS ISO/IEC 20000-1:2018, Clause 6)

2.4 Support of the SMS – Resources, Competence, Awareness and Communication (Clause 7)

The organisation shall determine and provide the resources needed for the establishment, implementation, maintenance and continual improvement of the SMS. Resources include people, infrastructure (including tools and technology), and the environment for the operation of processes. Under-resourcing is a common cause of SMS failure; top management commitment must be matched by adequate allocation of time, skills and tools.

The organisation shall determine the necessary competence of person(s) doing work under its control that affects the performance and effectiveness of the SMS, ensure that these persons are competent on the basis of appropriate education, training or experience, and where applicable take actions to acquire the necessary competence and evaluate the effectiveness of the actions taken. Appropriate documented information shall be retained as evidence of competence. Key roles typically include a service management system owner or representative, process owners (for incident, problem, change, etc.), service owners, and internal auditors.

Persons doing work under the organisation's control shall be aware of the service management policy, the objectives of the SMS relevant to them, their contribution to the effectiveness of the SMS (including the benefits of improved service management performance), and the implications of not conforming with the SMS requirements. Awareness is not a one-off induction event; it requires ongoing communication and reinforcement.

The organisation shall determine the internal and external communications relevant to the SMS, including on what it will communicate, when to communicate, with whom to communicate, and how to communicate. Effective communication supports engagement, escalations, reporting and relationship management with customers and suppliers.

(BS ISO/IEC 20000-1:2018, Clause 7)

2.5 Documented Information

Documented information required by the SMS and by ISO/IEC 20000-1 shall be controlled. This includes both documents (that provide evidence of planning and of the way processes are intended to operate) and records (that provide evidence of results achieved). Control of documented information covers creation and updating (identification and description, format, review and approval for suitability and adequacy) and control of distribution, access, retrieval and use, storage and preservation, control of changes, retention and disposition. Documented information of external origin that is necessary for the planning and operation of the SMS shall also be identified and controlled.

A pragmatic approach to documented information avoids both extremes: excessive bureaucracy that no one reads, and inadequate documentation that leaves the organisation unable to demonstrate conformity or to operate consistently. Process descriptions, policies, SLAs, procedures, work instructions, forms and records should be proportionate to the size and complexity of the organisation and the services delivered.

(BS ISO/IEC 20000-1:2018; ISO/IEC 20000 Handbook)

Key takeaway – Unit 2
Clauses 4–7 establish the foundation of the SMS: understanding context and interested parties, visible leadership and a clear policy, risk-based planning with measurable objectives, and the resources, competence, awareness, communication and documented information needed to support the system. Without this foundation, operational processes in Clause 8 cannot be sustained.

Practical Activity – Unit 2: Draft a simple interested-party register for an IT service provider (internal or external). Write or critique a service management policy against the requirements of Clause 5. List the competence requirements for at least three key SMS roles (e.g. SMS Owner, Incident Manager, Change Manager) and identify any current competence gaps.

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UNIT 3 – Operation of the SMS – Core Service Management Processes (Clause 8)

3.1 Overview of Clause 8

Clause 8 is the largest and most detailed part of ISO/IEC 20000-1. It covers the operational planning and control of the SMS and the requirements for the design, build, transition and delivery of services, as well as the management of relationships and the key processes that support service delivery. The organisation shall plan, implement and control the processes needed to meet requirements for the provision of services and to implement the actions determined in Clause 6. This includes determining process criteria, implementing control of the processes according to the criteria, and keeping documented information to the extent necessary to have confidence that the processes have been carried out as planned.

Clause 8 is commonly organised around themes such as service delivery, relationship and agreement, supply and demand, service design/build/transition, resolution and fulfilment, and service assurance. In practical terms, organisations implement a set of interconnected processes that include (among others) service level management, business relationship management, supplier management, incident management, service request management, problem management, configuration management, change management, release and deployment management, capacity management, availability management and service continuity management. The following sections examine the most frequently implemented processes in more detail.

(BS ISO/IEC 20000-1:2018, Clause 8; ISO/IEC 20000 Handbook)

3.2 Service Portfolio and Service Level Management

The organisation shall determine and manage a service portfolio. The service portfolio provides a complete view of the services under management, including those in the pipeline, those in the live catalogue, and those that have been retired. It supports decision-making about investment, prioritisation and retirement of services.

Service level agreements (SLAs) shall be agreed with the customer for the services delivered. SLAs define the service requirements and the load and performance characteristics that the service is expected to meet (for example, availability targets, response and resolution times, capacity thresholds and continuity arrangements). The organisation shall monitor and report on service levels and take action when agreed service levels are not met. Service Level Management (SLM) is the process that negotiates, agrees, monitors and reports on SLAs, and that drives improvement when targets are missed. SLM provides the critical link between the service provider and the customer regarding expected service quality and is one of the most visible processes to business stakeholders.

(BS ISO/IEC 20000-1:2018; ITIL Service Design / Continual Service Improvement)

3.3 Business Relationship Management and Supplier Management

Business Relationship Management (BRM) establishes and maintains a constructive relationship between the service provider and the customer. It includes understanding the business drivers and customer needs, managing customer satisfaction, handling complaints and compliments, and ensuring that the service provider remains aligned with changing business requirements. BRM operates at a more strategic level than the day-to-day contact of the service desk.

Supplier Management ensures that suppliers are managed to support the delivery of services and that contracts and agreements with suppliers are aligned with the SLAs and the needs of the SMS. This includes selection of suppliers, agreement of contracts or service agreements, monitoring of supplier performance, and management of supplier

relationships and disputes. In an increasingly outsourced and multi-sourced environment, effective supplier management is essential to end-to-end service quality.

(BS ISO/IEC 20000-1:2018, Clause 8)

3.4 Incident Management and Service Request Management

Incident Management restores normal service operation as quickly as possible and minimises the adverse impact on business operations. An incident is an unplanned interruption to a service or a reduction in the quality of a service. Incidents shall be recorded, classified, prioritised, escalated where necessary, resolved and closed. Prioritisation typically takes account of impact and urgency. Clear prioritisation and escalation rules prevent important incidents from being delayed while low-impact issues consume resources.

Service Request Management (or request fulfilment) handles service requests – formal requests from a user for something to be provided (for example, a password reset, a standard change, access to a service, or information). Service requests are often handled through a defined catalogue of standard requests with pre-approved workflows, which reduces the load on change management and improves speed and consistency.

The distinction between incidents and service requests is important: incidents are unplanned interruptions that require restoration; service requests are planned or standard demands that require fulfilment. Both are typically logged and managed through the service desk or an equivalent function.

(BS ISO/IEC 20000-1:2018; ITIL Service Operation)

3.5 Problem Management

Problem Management aims to prevent incidents from occurring and to minimise the impact of incidents that cannot be prevented. A problem is the underlying cause of one or more incidents. Problems shall be identified (proactively or reactively), recorded, prioritised, investigated and diagnosed. Known errors (problems for which the root cause is known and a workaround or permanent solution exists or is being developed) shall be recorded. Workarounds may be applied to reduce impact while a permanent fix is developed. Permanent solutions often require a change to be raised and implemented through Change Management.

Effective Problem Management reduces the volume and severity of incidents over time, improves the stability of services, and provides valuable input to continual improvement. It requires analytical skills, access to data (incident trends, configuration information, monitoring data) and the authority to drive investigation and resolution across technical teams.

(BS ISO/IEC 20000-1:2018; ITIL Service Operation)

3.6 Configuration Management and Change Management

Configuration Management ensures that accurate and reliable information about configuration items (CIs) is available when and where it is needed. A configuration item is any component that needs to be managed in order to deliver an IT service (for example, servers, applications, documentation, SLAs, or facilities). A configuration management database (CMDB) or equivalent system shall be maintained to store and manage CI information and the relationships between CIs. Accurate configuration information supports incident diagnosis, impact assessment for changes, and the ability to rebuild services after a failure.

Change Management controls the lifecycle of all changes, enabling beneficial changes to be made with minimum disruption to IT services. A change is the addition, modification or removal of anything that could have an effect on IT

services. Changes shall be recorded, assessed for risk and impact, authorised, implemented and reviewed. Different types of change (standard, normal, emergency) typically follow different paths with appropriate levels of assessment and authorisation. Post-implementation review of changes provides feedback for improvement and for the identification of failed or poorly executed changes.

(BS ISO/IEC 20000-1:2018; ITIL Service Transition)

3.7 Release and Deployment Management

Release and Deployment Management plans, schedules and controls the build, test and deployment of releases so that the integrity of the live environment is protected and the correct components are released. A release is a collection of hardware, software, documentation, processes or other components required to implement one or more approved changes to IT services. Releases shall be planned, built, tested, deployed and reviewed. Coordination with Change Management is essential: changes are authorised through Change Management; the packaging and deployment of those changes into the live environment is managed through Release and Deployment Management.

(BS ISO/IEC 20000-1:2018; ITIL Service Transition)

3.8 Capacity, Availability and Service Continuity Management

Capacity Management ensures that the capacity of services and the infrastructure that supports them meets current and future agreed needs in a cost-effective manner. It includes business capacity management, service capacity management and component capacity management, and relies on monitoring, analysis, forecasting and planning.

Availability Management ensures that services meet agreed availability targets. Availability is typically expressed as a percentage of agreed service time. Availability Management includes the design of resilient architectures, the monitoring of availability, the investigation of availability-related incidents and problems, and the planning of improvements.

Service Continuity Management supports the organisation's overall business continuity management by ensuring that agreed IT service continuity and recovery targets can be met following a major disruption. This includes the development, testing and maintenance of service continuity plans, the identification of critical services and their dependencies, and the definition of recovery time objectives (RTOs) and recovery point objectives (RPOs). Regular testing of continuity plans is essential; untested plans frequently fail when needed.

(BS ISO/IEC 20000-1:2018; ITIL Service Design)

3.9 Knowledge Management and Other Operational Requirements

The organisation shall manage knowledge to support the SMS and the services. Knowledge management ensures that the right information is available to the right people at the right time to support decision-making, diagnosis and improvement. In practice this includes known-error databases, knowledge articles for the service desk, process documentation, and the capture of lessons learned from major incidents, problems and changes.

Clause 8 also requires the organisation to control parties involved in the service lifecycle (including suppliers and internal groups), to design and transition services so that they meet service requirements, and to ensure that services are delivered in accordance with the agreements and the SMS. The cumulative effect of these requirements is a controlled, measurable and improvable service operation.

(BS ISO/IEC 20000-1:2018; ISO/IEC 20000 Handbook)

Key takeaway – Unit 3
Clause 8 requires the organisation to plan, implement and control the processes needed to deliver services that meet agreed requirements. The core processes – service level, incident, problem, change, configuration, release, capacity, availability and continuity management – work together to restore service quickly, prevent recurrence, control change, and assure capacity, availability and continuity. Accurate configuration information and clear agreements with customers and suppliers underpin the whole system.

Practical Activity – Unit 3: For a chosen IT service, draft high-level process descriptions for Incident Management, Problem Management and Change Management, showing triggers, key activities, outputs and interfaces. Identify at least five configuration items that would be recorded in a CMDB for that service and note the relationships between them.

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UNIT 4 – Performance Evaluation, Internal Audit, Management Review and Continual Improvement (Clauses 9–10)

4.1 Monitoring, Measurement, Analysis and Evaluation (Clause 9.1)

The organisation shall determine what needs to be monitored and measured, the methods for monitoring, measurement, analysis and evaluation needed to ensure valid results, when the monitoring and measuring shall be performed, and when the results shall be analysed and evaluated. The organisation shall evaluate the performance and the effectiveness of the SMS and retain appropriate documented information as evidence of the results.

Effective measurement focuses on both operational metrics (for example, incident volumes, resolution times, change success rates, availability percentages) and on outcomes that matter to the customer and the business (for example, customer satisfaction, achievement of SLA targets, and contribution to business objectives). Baselines should be established so that improvement can be measured over time. Measurement without analysis and action produces little value; the organisation must use the data to identify trends, risks and opportunities for improvement.

(BS ISO/IEC 20000-1:2018, Clause 9.1)

4.2 Internal Audit (Clause 9.2)

The organisation shall conduct internal audits at planned intervals to provide information on whether the SMS conforms to the organisation's own requirements for its SMS and the requirements of ISO/IEC 20000-1, and is effectively implemented and maintained. The organisation shall plan, establish, implement and maintain an audit programme(s), including the frequency, methods, responsibilities, planning requirements and reporting, which shall take into consideration the importance of the processes concerned, changes affecting the organisation, and the results of previous audits.

Auditors shall be selected and audits conducted to ensure objectivity and the impartiality of the audit process. In practice this means that auditors should not audit their own work. Results of the audits shall be reported to relevant management. Appropriate correction and corrective actions shall be taken without undue delay. Documented information shall be retained as evidence of the implementation of the audit programme and the audit results.

Internal audit is a primary source of assurance for top management and a key input to management review. A well-designed audit programme covers the full scope of the SMS over a defined cycle and focuses on both conformity and effectiveness.

(BS ISO/IEC 20000-1:2018, Clause 9.2)

4.3 Management Review (Clause 9.3)

Top management shall review the organisation's SMS at planned intervals to ensure its continuing suitability, adequacy and effectiveness. The management review shall include consideration of: the status of actions from previous management reviews; changes in external and internal issues that are relevant to the SMS; information on the performance and effectiveness of the SMS (including trends in nonconformities and corrective actions, monitoring and measurement results, audit results, and opportunities for continual improvement); adequacy of resources; and any need for changes to the SMS.

The outputs of the management review shall include decisions related to continual improvement opportunities and any need for changes to the SMS. Documented information shall be retained as evidence of the results of management

reviews. Management review is not a ceremonial meeting; it is the formal point at which top management assesses whether the SMS is delivering its intended results and decides what needs to change.

(BS ISO/IEC 20000-1:2018, Clause 9.3)

4.4 Nonconformity and Corrective Action (Clause 10.1)

When a nonconformity occurs, the organisation shall react to the nonconformity and, as applicable, take action to control and correct it and deal with the consequences; evaluate the need for action to eliminate the cause(s) of the nonconformity so that it does not recur or occur elsewhere (by reviewing the nonconformity, determining the causes, and determining if similar nonconformities exist or could potentially occur); implement any action needed; review the effectiveness of any corrective action taken; and make changes to the SMS if necessary. Corrective actions shall be appropriate to the effects of the nonconformities encountered.

It is essential to distinguish correction from corrective action. Correction is the immediate action taken to deal with the nonconformity itself (for example, resolving an open incident or fixing a failed change). Corrective action is the action taken to eliminate the root cause so that the nonconformity does not recur. Root-cause analysis techniques such as the 5 Whys and the fishbone (Ishikawa) diagram are commonly used to support effective corrective action.

(BS ISO/IEC 20000-1:2018, Clause 10.1)

4.5 Continual Improvement and the 7-Step Improvement Process

The organisation shall continually improve the suitability, adequacy and effectiveness of the SMS. Continual Service Improvement (CSI) is a core element of both ISO/IEC 20000 and ITIL. ITIL describes a 7-Step Improvement Process that provides a structured, repeatable approach to identifying, defining, gathering, processing, analysing, presenting and implementing improvements:

- Step 1 – Define what you should measure (based on business and service objectives, critical success factors and key performance indicators);
- Step 2 – Define what you can measure (given existing tools, data sources and constraints);
- Step 3 – Gather the data (collection through monitoring, tools, process records and surveys);
- Step 4 – Process the data (conversion of raw data into consistent, usable information);
- Step 5 – Analyse the data (identification of trends, patterns, strengths, weaknesses and root causes);
- Step 6 – Present and use the information (reporting to the appropriate audience in a form that supports decision-making);
- Step 7 – Implement improvement (action plans, changes, and verification that the improvement has delivered the intended benefit).

This process supports the Deming Cycle (Plan–Do–Check–Act) and provides a practical method for driving continual improvement of services and processes. It aligns directly with the monitoring and measurement requirements of Clause 9.1, the review activities of Clause 9.3, and the improvement requirements of Clause 10. Organisations that adopt the 7-Step process systematically are more likely to move from reactive firefighting to proactive, data-driven improvement.

(ITIL Continual Service Improvement; BS ISO/IEC 20000-1:2018, Clause 10)

4.6 Service Measurement, Baselines and Benchmarks

Effective improvement depends on measurement. Baselines provide a starting point against which improvement can be measured. Without a baseline, it is difficult to demonstrate that an improvement initiative has delivered value.

Benchmarks (internal or external comparisons) can be used as a lever for improvement and as a steering instrument. Service measurement should focus on value to the business as well as on operational metrics; a service that meets all technical targets but fails to support business outcomes is not successful.

(ITIL Continual Service Improvement)

Key takeaway – Unit 4
Clauses 9 and 10 close the management system loop. Monitoring and measurement provide data; internal audit provides independent assurance; management review provides top-management oversight and direction; nonconformity and corrective action address failures; and continual improvement, supported by the 7-Step Improvement Process and the Plan–Do–Check–Act cycle, drives ongoing enhancement of the SMS and the services it delivers.

Practical Activity – Unit 4: Design a simple internal-audit checklist for one core process (e.g. Incident Management or Change Management). Prepare a management-review agenda using the inputs required by Clause 9.3. Outline how you would apply the 7-Step Improvement Process to improve a selected service metric (for example, mean time to restore service, or change success rate).

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UNIT 5 – Implementation Roadmap, Gap Analysis, Certification Preparation and Modern Approaches

5.1 Typical Implementation Roadmap

A practical sequence for implementing an ISO/IEC 20000-1 SMS typically includes the following stages. The order may be adapted to the organisation's starting point and priorities, but skipping foundation steps (commitment, scope, policy, gap analysis) frequently leads to rework later.

- Top management commitment and appointment of an SMS owner or Service Management representative with clear authority and resources;
- Gap analysis against ISO/IEC 20000-1:2018 requirements to identify what already exists and what needs to be created or improved;
- Determination of organisational context, interested parties and the scope of the SMS;
- Establishment of the service management policy and measurable service management objectives;
- Design and documentation of the required processes and documented information (proportionate to the size and complexity of the organisation);
- Competence, awareness and training programmes for all relevant roles;
- Operational implementation and monitoring of processes, with early focus on the most critical services and processes;
- Internal audit programme and completion of at least one full cycle of internal audits;
- Management review of the SMS by top management;
- Corrective actions arising from audits, reviews and operational experience, and the embedding of continual improvement;
- Stage 1 (documentation / readiness) and Stage 2 (implementation) certification audits by an accredited certification body;
- Surveillance audits and eventual recertification to maintain the certificate.

(ISO/IEC 20000 Handbook – Getting started; Achieving sustained success)

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5.2 Gap Analysis and Documented Information

A gap analysis compares the organisation's current practices with the requirements of ISO/IEC 20000-1. It identifies missing processes, inadequate controls, gaps in roles and responsibilities, and deficiencies in documented information. The output of the gap analysis is a prioritised action plan that forms the backbone of the implementation project.

Documented information to be maintained (documents) typically includes the scope of the SMS, the service management policy, service management objectives, and descriptions of the processes required by the standard. Documented information to be retained (records) includes evidence of competence, monitoring and measurement results, internal audit programme and results, management review outputs, nonconformities and corrective actions, and records related to the operation of key processes (for example, incident records, change records, SLA reports). The organisation should avoid creating documentation that is not used; every document should have a clear purpose and owner.

(BS ISO/IEC 20000-1:2018; ISO/IEC 20000 Handbook)

5.3 Certification Audits – Stage 1 and Stage 2

Certification to ISO/IEC 20000-1 is performed by accredited certification bodies. The initial certification process typically consists of two stages. Stage 1 (readiness / documentation review) evaluates the documented information of the SMS, the organisation's understanding of the requirements of the standard, the allocation of resources, the status of internal audits and management reviews, and the overall readiness for Stage 2. Stage 1 may be conducted on-site or, in some cases, remotely; its purpose is to identify any major gaps before the more intensive Stage 2 audit.

Stage 2 evaluates the implementation and effectiveness of the SMS. Auditors examine whether the processes are operating as described, whether records demonstrate that requirements are being met, whether services are being delivered in accordance with agreements, and whether the organisation is able to demonstrate continual improvement. Nonconformities raised at Stage 2 must be addressed before a certificate is issued (or within an agreed timeframe for minor nonconformities, depending on the certification body's rules).

After certification, surveillance audits are conducted at planned intervals (commonly annually) to confirm ongoing conformity. A recertification audit is required at the end of the certification cycle (typically three years). Common nonconformities in ISO/IEC 20000-1 audits include incomplete process definitions, weak measurement and reporting, inadequate change or configuration control, ineffective corrective action, and insufficient evidence of management review and continual improvement.

(ISO/IEC 20000 Handbook; BS ISO/IEC 20000-1:2018)

5.4 Using Lean, Agile and DevOps with ISO/IEC 20000-1

Modern service delivery approaches such as Lean, Agile and DevOps can be used successfully alongside an ISO/IEC 20000-1 SMS. Lean focuses on eliminating waste, improving flow and delivering value from the customer's perspective. Agile emphasises iterative delivery, collaboration and responsiveness to change. DevOps integrates development and operations practices to enable faster, more reliable and more frequent releases of software and services.

These approaches do not replace the need for an SMS; rather, they can strengthen it when their principles are aligned with the requirements for planning, control, measurement and improvement. For example, automated testing and continuous deployment pipelines can support Release and Deployment Management and Change Management; frequent feedback loops support continual improvement; and a focus on flow and waste reduction can improve the efficiency of Incident and Request Management. The organisation should ensure that the control points required by ISO/IEC 20000-1 (for example, change authorisation, configuration integrity, and measurement of service levels) remain effective even as delivery speed increases.

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The ISO/IEC 20000 Handbook also notes the need to consider the impact of digitally disruptive emerging technologies when designing and improving the SMS. Cloud computing, automation, artificial intelligence and new sourcing models change the way services are designed and delivered; the SMS must be capable of adapting while preserving control and accountability.

(ISO/IEC 20000 Handbook – Using Lean, Agile and DevOps with ISO/IEC 20000-1)

5.5 Sustaining the SMS

A sustainable SMS is integrated into daily operations rather than treated as a parallel compliance exercise. It is supported by competent people who understand their roles, verified by meaningful internal audits that identify real weaknesses, reviewed by top management with genuine engagement and decision-making, and continually improved on the basis of real data (service performance, customer feedback, audit findings, problem trends and improvement

opportunities). Documentation should support consistent control and improvement; it should not exist as an end in itself.

Organisations that sustain their SMS over multiple certification cycles typically have clear process ownership, regular and honest management reviews, a living continual improvement register, and a culture that values learning from failure as well as celebrating success.

(ISO/IEC 20000 Handbook – Achieving sustained success)

5.6 Examination Guidance

The final examination for this short course assesses knowledge across all five units. It typically comprises multiple-choice questions covering the structure and requirements of ISO/IEC 20000-1, the relationship with ITIL, the core operational processes, measurement and continual improvement, and certification concepts, together with short essay questions that require application of process understanding and improvement approaches. The pass mark is 50%. Successful completion leads to a Certificate of Completion issued by SFP International Quality Institute. This short-course certificate demonstrates individual learning; it does not itself certify an organisation. Organisational certification to ISO/IEC 20000-1 is awarded only by accredited certification bodies following successful Stage 1 and Stage 2 audits.

(Course design notes; ISO/IEC 20000 Handbook)

Key takeaway – Unit 5
Successful implementation requires top management commitment, a realistic scope, a thorough gap analysis, proportionate documented information, competent people, operating processes, internal audit, management review and continual improvement. Certification is achieved through Stage 1 and Stage 2 audits by an accredited body. Lean, Agile and DevOps can strengthen the SMS when aligned with its control and improvement requirements. Sustainability depends on integration into daily work and genuine leadership engagement.

Practical Activity – Unit 5: Complete a mini gap-analysis checklist against ISO/IEC 20000-1 Clauses 4–10 for your organisation or a case study. Outline a Stage 1 / Stage 2 preparation checklist. Describe how one Lean, Agile or DevOps practice could strengthen a selected SMS process while preserving necessary control.

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Additional Guidance –

Integrating Processes Across the Lifecycle

The processes described in Unit 3 do not operate in isolation. Incident Management feeds Problem Management when recurring or high-impact incidents require root-cause analysis. Problem Management frequently raises changes through Change Management to implement permanent fixes. Change Management depends on accurate configuration information from Configuration Management to assess impact, and on Release and Deployment Management to package and deploy authorised changes safely. Service Level Management uses data from all of these processes to report performance against SLAs and to identify improvement opportunities. Capacity, Availability and Continuity Management provide the design and assurance that underpins the ability to meet SLA targets. Understanding these interfaces is essential for both implementation and audit.

When designing or improving an SMS, organisations should map the main interfaces between processes and ensure that hand-offs are defined (for example, when an incident becomes a problem record, when a problem requires a change, and when a change requires a release). Clear interfaces reduce duplication, prevent incidents from being closed without underlying causes being addressed, and ensure that changes are not implemented without adequate testing and communication.

Roles and RACI

A common practical tool for clarifying responsibilities within the SMS is the RACI matrix (Responsible, Accountable, Consulted, Informed). For each major process activity, the organisation can identify who is Responsible for performing the work, who is Accountable for the outcome, who must be Consulted before a decision, and who must be Informed of the result. Applying RACI to processes such as Incident Management, Change Management and Continual Improvement helps prevent gaps and overlaps in accountability and supports the competence and awareness requirements of Clause 7.

Typical roles in an ISO/IEC 20000-1 SMS include the SMS Owner or Service Management Representative (accountable for the system as a whole), Process Owners (accountable for the design and performance of individual processes), Service Owners (accountable for specific services end-to-end), the Service Desk or Operations function (responsible for day-to-day incident and request handling), technical teams (responsible for investigation and resolution), and Internal Auditors (responsible for independent assessment of conformity and effectiveness).

Measurement and the Balanced View

Organisations sometimes focus measurement exclusively on operational metrics such as the number of incidents closed or the percentage of changes implemented on schedule. While these metrics are useful, they should be balanced with measures of customer outcome and business value. A service that resolves incidents quickly but still fails to support critical business processes is not fully successful. The 7-Step Improvement Process encourages the organisation to begin with what should be measured from a business and customer perspective, and only then to determine what can be measured with available data and tools. This orientation keeps improvement activity aligned with the purpose of the SMS.

Baselines and targets should be set realistically. Over-ambitious targets that are never met demotivate staff and undermine credibility. Under-ambitious targets produce complacency. Reviewing targets as part of management review ensures that they remain appropriate as the organisation and its services mature.

References

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End of Course Content

This course content is intended for educational purposes within the SFP International Quality Institute pure-online certificate programme. Organisational certification to ISO/IEC 20000-1 is awarded only by accredited certification bodies following successful Stage 1 and Stage 2 audits.

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