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Microsoft® Operations Framework

Using MOF for ISO/IEC 20000:
A MOF Companion Guide

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INTRODUCTION

Microsoft® Operations Framework (MOF) 4.0 focuses on practical guidance for everyday IT practices and activities, helping IT pros establish and implement reliable, cost-effective IT services. ISO/IEC 20000 is an international standard that defines a set of IT service management processes necessary for the successful delivery of IT services to customers.

This guide describes the relationships between MOF phases and the components of ISO/IEC 20000 and how to use MOF as a means of meeting ISO/IEC 20000 standards.

INTENDED AUDIENCE

This guide is intended for use by IT management, staff, and service providers seeking to implement ISO/IEC 20000 standards in their organizations.

ABOUT MOF 4.0

Microsoft Operations Framework (MOF) 4.0 is concise guidance that helps IT improve service quality while reducing costs, managing risks, and strengthening compliance. MOF defines the core processes, activities, and accountabilities required to plan, deliver, operate, and manage IT services throughout their lifecycles. MOF guidance encompasses all of the activities and processes involved in managing an IT service: its conception, development, operation, maintenance, and—ultimately—its retirement.

MOF organizes IT activities and processes into service management functions (SMFs), which provide detailed processes and desired outcomes related to a series of IT disciplines. Each SMF is anchored within a lifecycle phase and contains a unique set of goals and desired outcomes that support the objectives of that phase. Additional information about SMFs is available at www.microsoft.com/mof.

ABOUT MOF COMPANION GUIDES

MOF companion guides are intended to help decision makers and IT pros perform IT-related activities effectively and cost-efficiently. Each guide focuses on a specific IT challenge and applies relevant MOF 4.0 principles.

WHERE THIS GUIDE FITS WITHIN MOF

Core MOF 4.0 content (found at www.microsoft.com/mof) offers a broader discussion and context of the activities and processes in this guide. MOF 4.0 depicts the complete IT service lifecycle, and its guidance is practical and relevant for all IT activities—beyond just the implementation of MOF to help achieve ISO/IEC 20000 standards. However, two MOF sections—the Manage Layer and the Plan Phase—are especially relevant to the guidance found in this guide. In addition, the Business/IT Alignment SMF and the Governance, Risk, and Compliance SMF help to establish and maintain an organization's vision and direction during the implementation of ISO/IEC 20000.

GOALS OF THE ISO/IEC 20000 COMPANION GUIDE

This guide addresses the following questions:

- What are the relationships between the MOF phases and the components of ISO/IEC 20000?
- How does MOF support the requirements of the ISO/IEC 20000 standard?
- What modifications to MOF are needed to support the ISO/IEC 20000 requirements?

GAPS

Several important topic areas are not in the scope of this guide. These include the design of the IT service management processes based on the combination of MOF and ISO/IEC 20000, as well as the design of specific IT services.

MOF and ISO/IEC 20000 do not map precisely; some parts of MOF are not applicable to ISO/IEC 20000. Although many MOF processes can help you reach ISO standards directly, others require modification.

FEEDBACK

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WHY IMPLEMENT ISO/IEC 20000?

Service reliability, efficiency, and customer focus lead to positive company performance. ISO/IEC 20000 formalizes the improvement process to achieve these objectives. MOF speeds up the ISO/IEC 20000 implementation process.

For many years, organizations could not gauge how well they were performing against any type of standard measure, and customers had no standard way to assess a vendor's quality. ISO/IEC 20000 is a mechanism that allows service providers to validate their ability to deliver IT services. Its basic goals are reduction of service outages and improved customer satisfaction through the delivery of better IT services. Implementation of ISO/IEC 20000 demonstrates that an organization adheres to a repeatable quality management approach in delivering efficient, effective IT services.

ISO/IEC 20000 contains two parts (ISO/IEC 20000-1 and ISO/IEC 20000-2). The first part is the auditable *specification*, which defines the requirements for certification (the "shalls"). The second part is the *code of practice* (the "shoulds"), which contains recommendations and guidance for helping organizations achieve the first part.

Implementation of ISO/IEC 20000 can show customers, management, and governing organizations that:

- Your processes and delivery mechanisms are aligned with customer requirements.
- Your staff members understand their roles and responsibilities.
- Your suppliers understand and perform to the commitments that you and they have agreed upon.
- Your processes are defined, measured, communicated, followed, and continually reviewed for improvement.
- The processes you follow for managing services are integrated and support each other.
- Your processes support a clearly defined service management strategy that is continually tuned to match the requirements of the markets and customers that you serve.
- Forward planning and structure define the management style of your organization.

USING MOF FOR ISO/IEC 20000 IMPLEMENTATION

MOF 4.0 is an IT service management framework made up of service management functions (SMFs) and processes that IT pros use to improve service quality. ISO/IEC 20000 is the standard by which IT service providers are evaluated to demonstrate their ability to effectively manage IT services. A helpful analogy is to think of MOF as a car and ISO/IEC 20000 certification as a destination. The car does not replace the destination—it is the means used to arrive at the destination.

A *process* is a set of interrelated activities designed to transform inputs into pre-defined acceptable outputs. The benefit of a process-based framework is that you then have a repeatable set of activities in place designed to take the input, modify or change that input, and deliver the desired output. Because the process is documented and repeatable, it is now a tangible item that can be monitored, measured, and improved over time. If you do not like the outcome, you can either change the inputs, change the process activities to improve the output, or change the expectation of what the output is to be. By defining and communicating the expected output, you also control the customer's expectation (and therefore the customer's satisfaction).

PHASED APPROACH TO ISO/IEC 20000

Implementing any IT service management framework calls for thorough planning. Most organizations use a phased approach to implementing service management functions and processes. It is crucial to consider the ISO/IEC 20000 requirements prior to implementing MOF. In doing so, you can manage any necessary adjustments between MOF and ISO/IEC 20000 and combine the requirements, thereby minimizing risk and disruption to your organization.



Figure 1. The Microsoft Operations Framework (MOF) 4.0 IT service lifecycle

THE MANAGE LAYER

This phased approach begins with the MOF Manage Layer. The following table compares the components of the Manage Layer with related processes from ISO/IEC 20000.

Table 1. MOF Manage Layer and Related ISO/IEC 20000 Processes

MOF Manage Layer	ISO/IEC 20000 Process
<ul style="list-style-type: none"> Governance, Risk, and Compliance SMF Change and Configuration SMF Team SMF 	<ul style="list-style-type: none"> Requirements for a Management System Planning and Implementing Service Management Configuration Management Change Management

THE OPERATE PHASE

Once the controls (found in the Manage Layer) are in place, focus on IT operations and support. At this point, controls have stabilized the IT services, leaving IT free to improve its customer interface.

Table 2. MOF Operate Phase and Related ISO/IEC 20000 Processes

MOF Operate Phase	ISO/IEC 20000 Process
<ul style="list-style-type: none"> • Operations SMF • Customer Service SMF • Service Monitoring and Control SMF • Problem Management SMF 	<ul style="list-style-type: none"> • Incident Management • Problem Management

THE PLAN PHASE

During the Plan Phase, the business and IT work as partners to determine how IT will be focused to deliver valuable services that enable the organization to succeed.

Table 3. MOF Plan Phase and Related ISO/IEC 20000 Processes

MOF Plan Phase	ISO/IEC 20000 Process
<ul style="list-style-type: none"> • Business/IT Alignment SMF • Reliability SMF • Financial Management SMF • Policy SMF 	<ul style="list-style-type: none"> • Business Relationship Management • Supplier Management • Service Level Management • Service Reporting • Service Continuity and Availability Management • Budgeting and Accounting for IT Services • Capacity Management • Information Security Management

THE DELIVER PHASE

The MOF Deliver Phase provides the mechanism for implementing major projects into the live environment. Implementing the Deliver Phase SMFs will ensure that any project is properly planned, built, deployed, and stabilized.

Table 4. MOF Deliver Phase and Related ISO/IEC 20000 Processes

MOF Deliver Phase	ISO/IEC 20000 Process
<ul style="list-style-type: none"> • Envision SMF • Project Planning SMF • Build SMF • Deploy SMF • Stabilize SMF 	<ul style="list-style-type: none"> • Planning and Implementing New or Changed Services • Release Management

ADJUSTING MOF FOR ISO/IEC 20000 IMPLEMENTATION

Many components of MOF 4.0 support ISO/IEC 20000 standards without any modification, but several processes do require adjustments. This section outlines these necessary adjustments by phase.

Note This section assumes that you are closely following MOF 4.0 processes.

MOF MANAGE LAYER AND ISO/IEC 20000 SERVICE MANAGEMENT SYSTEM

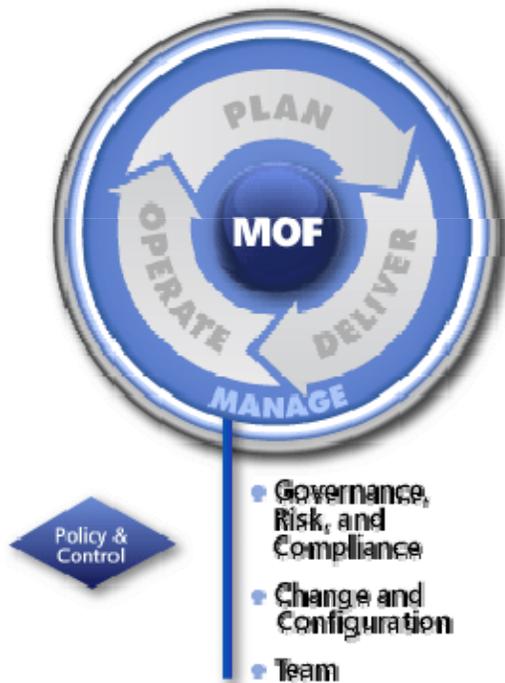


Figure 2. The MOF Manage Layer

The ISO/IEC 20000 service management system ensures that service improvement activities are carried out based on the plan-do-check-act method (or PDCA cycle) developed by W. Edwards Deming in the 1950s. The MOF Manage Layer provides the control of the process improvement through the Governance, Risk, and Compliance SMF and the Change and Configuration SMF.

There are some prescriptive differences between the ISO/IEC 20000 service management system and the components of the MOF Manage Layer; the necessary adjustments that should be applied to MOF are described in the following table.

Table 5. Adjustments to the MOF Manage Layer

Manage Layer SMFs or Management Review	Adjustments to MOF
Governance, Risk, and Compliance SMF	<ul style="list-style-type: none"> • Implement a formal continuous improvement process. • Ensure that a mechanism is in place for the identification, reporting, and review of any nonconformance to ISO/IEC 20000. • Document security controls, along with the risks to which the controls relate. • Make configuration information available to change management personnel to ensure well-informed decisions. • Ensure that configuration items are traceable and have a documented financial value. • Document a baseline of the infrastructure prior to any product release into a live environment. • Create a repository for digital configuration items (such as software).
Change and Configuration SMF	<ul style="list-style-type: none"> • Ensure that documents are under the control of the change management process. • Ensure that the configuration management system (CMS) identifies the relationships between configuration changes and their stakeholders. • Document and report any discrepancies during audits of configuration items. • Document how changes can be reversed if they are unsuccessful. • Assess the financial impact of any proposed change prior to implementation. • Analyze change records on a regular basis. • Ensure that any proposed changes do not invalidate your IT organization's availability and continuity plans. • Assess the impact of changes on security controls, and do not authorize any changes if they bypass those controls.
Team SMF	<ul style="list-style-type: none"> • Identify one individual to act as the main interface between the business and IT. • Define the role of the information security manager.
Policy and Control Management Review	<ul style="list-style-type: none"> • This management review needs no adjustment to reflect ISO/IEC 20000 standards.

MOF OPERATE PHASE AND ISO/IEC 20000 RESOLUTION PROCESS

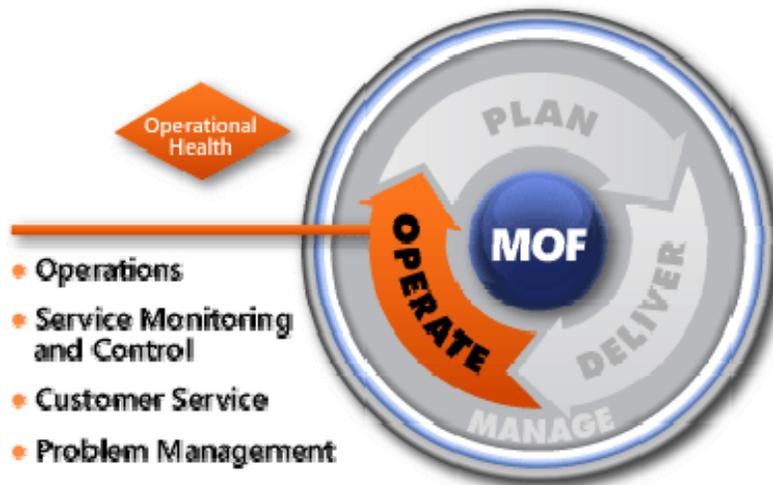


Figure 3. The MOF Operate Phase

ISO/IEC 20000 resolution processes include Incident Management and Problem Management. The MOF 4.0 Operate Phase exceeds the ISO/IEC 20000 incident management and problem management requirements by including service monitoring and control and operations. The service desk/customer service is out of scope of ISO/IEC 20000. This does not mean that the activities the service desk performs are out of scope; many service desk activities fall under the auspices of incident management, and therefore many customer service activities are covered by ISO/IEC 20000 resolution processes.

Table 6. Adjustments to the MOF Operate Phase

Operate Phase SMF or Management Review	Adjustments to MOF
Operations SMF	<ul style="list-style-type: none"> This SMF needs no adjustment to reflect ISO/IEC 20000 standards.
Service Monitoring and Control SMF	<ul style="list-style-type: none"> Measure and record availability of services. Escalate any unplanned lack of availability.
Customer Service SMF	<ul style="list-style-type: none"> Record and manage security incidents to reflect the incident management procedures. This doesn't necessarily mean that the service desk will be resolving security issues; instead, it calls for a classification relating to security and a separate escalation path for security incidents. Ensure that incident staff members have a categorization and prioritization process in place and access to a known error database and history of prior incidents. Consider making the same person responsible for seeing an incident through to the end—that is, through root cause analysis and, finally, closure.

Operate Phase SMF or Management Review	Adjustments to MOF
Problem Management SMF	<ul style="list-style-type: none"> Analyze trend information to proactively identify the root cause of incidents and possibly prevent some of these incidents from reoccurring. Give the problem management team ownership of the known error database, and make sure this database is available to the incident management team.
Operational Health Management Review	<ul style="list-style-type: none"> This management review needs no adjustment to reflect ISO/IEC 20000 standards.

MOF DELIVER PHASE AND ISO/IEC 20000 RELEASE PROCESS

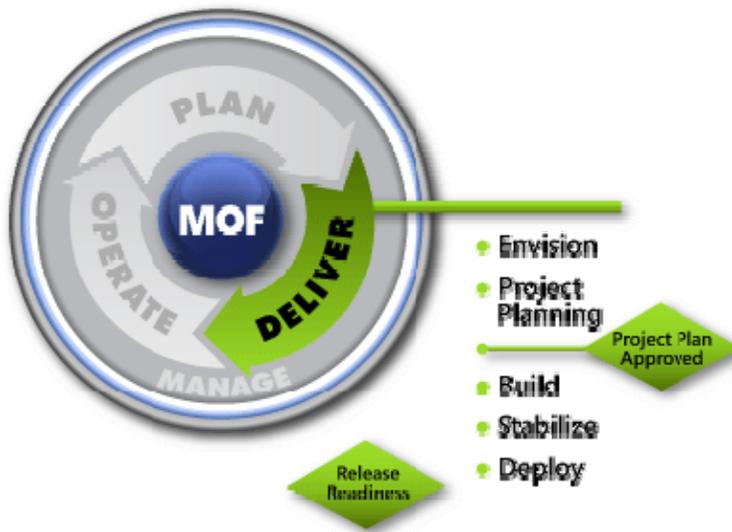


Figure 4. The MOF Deliver Phase

The ISO/IEC 20000 release process closely matches the MOF Deliver Phase. The MOF Deliver Phase exceeds the ISO/IEC 20000 release process requirements. As change management was discussed previously in the MOF 4.0 Manage Layer, the ISO/IEC 20000 release management process is tightly integrated with both the change management and the configuration management processes.

The Deliver Phase is similar to the Planning and Implementing New or Changed Services (PINCS) section of ISO/IEC 20000. The objective of this section of ISO/IEC 20000 is to ensure that new services and changes to services will be deliverable and manageable at the agreed cost and service quality. The Deliver Phase also encompasses portions of release management.

As a whole, the Deliver Phase meets the requirements from the PINCS, Control, and Release sections from ISO/IEC 20000 and extends into additional related processes. Any adjustments are generally very prescriptive and relate to a specific document or sign-off.

Table 7. Adjustments to MOF Deliver Phase

Deliver Phase SMF or Management Review	Adjustments to MOF
Envision SMF	<ul style="list-style-type: none"> • Create a business case that includes costs and impacts that could result from the implementation of any new or changed service.
Project Planning SMF	<ul style="list-style-type: none"> • Clearly define what constitutes normal project planning criteria, including service acceptance criteria for deployment.
Build SMF	<ul style="list-style-type: none"> • Establish a controlled acceptance test environment to keep tight control over testing.
Stabilize SMF	<ul style="list-style-type: none"> • Ensure that new or changed services are accepted by the service provider before being implemented into the live environment. Get this approval after completion of the pilot and before deploying to the full release.
Deploy SMF	<ul style="list-style-type: none"> • For each deployment, analyze the impact to the business, including resource utilization and incidents. Ensure that this information is available through the continuous service improvement program. • In the post-implementation review following the implementation of new or changed services, evaluate the outcomes achieved versus the outcomes planned. This will be done in conjunction with change management.
Project Plan Approved Management Review	<ul style="list-style-type: none"> • This management review needs no adjustment to reflect ISO/IEC 20000 standards.
Release Readiness Management Review	<ul style="list-style-type: none"> • This management review needs no adjustment to reflect ISO/IEC 20000 standards.

MOF PLAN PHASE AND ISO/IEC 20000 SERVICE DELIVERY AND BUSINESS RELATIONSHIP PROCESSES

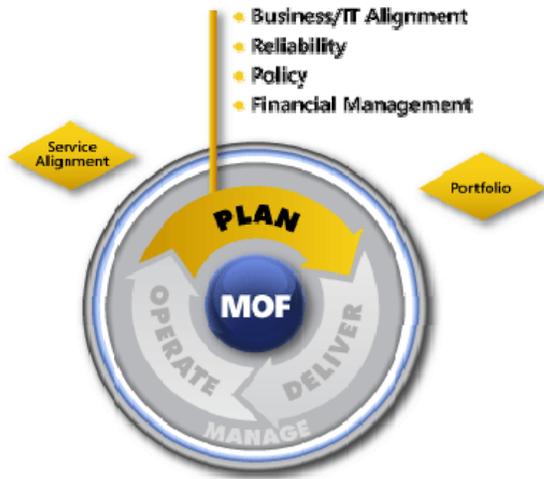


Figure 5. The MOF Plan Phase

The MOF 4.0 Plan Phase is closely aligned to many of the service delivery processes within ISO/IEC 20000 as well as the ISO/IEC 20000 business relationship processes. The ISO/IEC 20000 processes closely aligned with the Plan Phase include service level management, business relationship management, supplier management, service reporting, and financial management.

The Reliability SMF includes the ISO/IEC 20000 service delivery processes such as IT service continuity, availability management, and capacity management. Information security is reflected in the MOF 4.0 Manage Layer.

Table 8. Adjustments to MOF Plan Phase

Plan Phase SMF or Management Review	Adjustment to MOF
Business/IT Alignment SMF	<ul style="list-style-type: none"> For each proposed project, ensure that both IT and the customers agree to the set of services, workload characteristics, and targeted performance and features.
Reliability SMF	<ul style="list-style-type: none"> Review the continuity and availability plans at least annually. Ensure that the capacity plan reflects timelines, thresholds, and costs for planned upgrades. To capture all the relevant data, consider creating a template for capacity plans.
Policy SMF	<ul style="list-style-type: none"> Create and get agreement to a policy stating the type and frequency of releases to the live environment.
Financial Management SMF	<ul style="list-style-type: none"> For each project, ensure that both direct and indirect costs have been precisely allocated.
Service Alignment Management Review	<ul style="list-style-type: none"> Ensure that the Service Alignment Review has a formal schedule. It should occur at least annually and after major outages or major changes to services.
Portfolio Management Review	<ul style="list-style-type: none"> This management review needs no adjustment to reflect ISO/IEC 20000 standards.

CONCLUSION

Implementing Microsoft Operations Framework can help you meet ISO/IEC 20000 standards; it can also result in improved IT service quality, reduced costs, and solid risk management. Appendix A provides a step-by-step roadmap for implementation. You can start using it immediately and tailor it to your business's needs. Whether or not you elect to attempt certification, compliance with ISO/IEC 20000 standards will demonstrate that your business is dedicated to reliability, efficiency, and customer focus.

FEEDBACK

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APPENDIX A: ROADMAP FOR ISO/IEC 20000 IMPLEMENTATION USING MOF

Preparing to achieve ISO/IEC 20000 compliance involves staff training, assessments, project planning, project implementation, and gap analysis. The implementation is phased and can span several months. The following is a start-to-finish implementation roadmap for implementing ISO/IEC 20000. Variations can be tailored to accommodate an organization's IT service management maturity.

The table below identifies the key activities involved in implementing the ISO/IEC 20000 standards.

Table A-1. Key Activities for the Implementation of ISO/IEC 20000 Standards

Activities	Considerations
Envision the project	<p>Key questions:</p> <ul style="list-style-type: none"> • How will the IT service provider communicate the benefits of ISO/IEC 20000 to the organization? • How does MOF 4.0 provide efficiency gains for the organization? <p>Inputs:</p> <ul style="list-style-type: none"> • Vision statement regarding why the IT service provider (internal or external) wants to achieve ISO/IEC 20000 implementation • Scope of the IT services by customer and location <p>Outputs:</p> <ul style="list-style-type: none"> • IT service management training for IT staff • Communication from senior management regarding the expected benefits of IT service management • Communication from senior management regarding the benefits of MOF • ISO/IEC 20000 scoping statement • Business case for implementing MOF and ISO/IEC 20000 defining the benefits internally to IT and externally to the customers <p>Best practices:</p> <ul style="list-style-type: none"> • Set the scope to be successful; implement the IT service management framework in phases. The phases could be broken out by location, technology, or service management functions. • Change is disruptive. Communicate with IT staff members so they feel included and are more willing to participate in changing the way they operate. • To better familiarize yourself with MOF, download the IT Pro Quick Start Kit at www.microsoft.com/mof.

Activities	Considerations
Perform gap assessment	<p>Key question:</p> <ul style="list-style-type: none"> • How should the existing IT service management processes be mapped to both MOF and ISO/IEC 20000? <p>Inputs:</p> <ul style="list-style-type: none"> • Existing process documentation • IT organizational structure <p>Outputs:</p> <ul style="list-style-type: none"> • Identification of the gaps between current or existing service management processes and activities compared to MOF and ISO/IEC 20000 • Roadmap on how to bridge the gaps between existing processes and MOF/ISO 20000 <p>Best practices:</p> <ul style="list-style-type: none"> • Prior to starting a process improvement project, evaluate the efficiency and effectiveness of existing IT service management processes. • Ensure that deliverables from the gap assessment include a document detailing both your current service management processes and recommendations for process modifications to meet the ISO/IEC 20000 requirements.
Plan the project	<p>Key questions:</p> <ul style="list-style-type: none"> • What is the best way to approach the implementation of MOF and ISO/IEC 20000? Put another way, do you start from the beginning and replace processes that are already in place, or do you improve the processes to meet the requirements of MOF and ISO/IEC 20000? <p>Inputs:</p> <ul style="list-style-type: none"> • Scope statement identified in the awareness stage • A continuous service improvement model <p>Outputs:</p> <ul style="list-style-type: none"> • A project plan detailing the service management processes in scope along with the facing or timing of improvements • A defined budget for the implementation of the combined MOF and ISO/IEC 20000 frameworks <p>Best practices:</p> <ul style="list-style-type: none"> • Understanding the gaps, you can now plan the project to improve IT service management processes in the organization to comply with both MOF and ISO/IEC 20000. • The budget for the project may be perceived as an overhead expense unless the benefits of having both a more efficient and effective IT service management system are defined and understood.

Activities	Considerations
Plan and implement IT service management	<p>Key questions:</p> <ul style="list-style-type: none"> • What part of the service management framework needs to be in place to ensure the success of any process improvement initiative? • What is the continuous service improvement approach? • How to manage the risks of implementing new processes and procedures while maintaining and improving existing levels of service to customers? <p>Inputs:</p> <ul style="list-style-type: none"> • The selected continuous service improvement model • The project plan including phasing decisions <p>Outputs:</p> <ul style="list-style-type: none"> • A continuous service improvement program • Management responsibilities • Documentation management procedures • Accountabilities and training requirements <p>Best practice:</p> <ul style="list-style-type: none"> • Service management must be planned. The service management system will be one of the first components of ISO/IEC 20000 to be implemented. This will ensure appropriate management and control of the process improvement activities.

Activities	Considerations
Improve IT service management processes	<p>Key questions:</p> <ul style="list-style-type: none"> • How to improve processes to ensure efficiency and effectiveness is maintained while meeting the requirements of MOF and ISO/IEC 20000? • How to ensure that the correct interfaces between processes are maintained during process improvement? <p>Inputs:</p> <ul style="list-style-type: none"> • The IT service management system and a control framework defining the interfaces required between service management processes • The continuous service improvement program defining how to handle gaps between existing processes and the desired end state <p>Outputs:</p> <ul style="list-style-type: none"> • IT service management processes that meet the requirements of MOF and ISO/IEC 20000 • Improved efficiency in IT service management processes based on the adoption of the efficiencies within MOF <p>Best practice:</p> <ul style="list-style-type: none"> • The IT service management process improvement identifies the following for each process in the service management framework: <ul style="list-style-type: none"> • Policies • Processes • Activities • Roles and responsibilities/accountabilities • Goals and metrics
Prepare for audit	<p>Key questions:</p> <ul style="list-style-type: none"> • Is the IT service provider ready to be audited by a third party against ISO/IEC 20000? • What is the audit process for gaining ISO/IEC 20000 certification? <p>Inputs:</p> <ul style="list-style-type: none"> • The scope statement of the IT service management system covering the organization to be certified, the services being offered, the location from which the services are being offered, and the customers that utilize the services within scope <p>Outputs:</p> <ul style="list-style-type: none"> • An audit report identifying any nonconformities • Achievement of ISO/IEC 20000 certification

APPENDIX B: KEY ROLES

The primary Team SMF accountability that applies to *Using MOF to Implement ISO/IEC 20000: A MOF Companion Guide* is the Management Accountability. Roles within the other accountabilities are also involved. The Management Accountability role types and their primary responsibilities within this guide are displayed in the following table.

Note See the [MOF Team SMF](#) for more information about role types and accountabilities.

Table B-1. Role Types

Role Type	Accountability	Responsibilities in This Guide
IT Executive Officer	Management	Defines and communicates vision as to why the organization is using ISO/IEC 20000 and MOF
IT Policy Manager	Management	Ensures that management decisions are informed by policy and that policy is effectively used across IT
IT Risk and Compliance Manager	Compliance	Communicates GRC processes and requirements to organization
Architecture Manager	Architecture	Provides roadmap for future use to support design process and ensure operability
Architect	Architecture	Develops long-term service management framework solutions and choices
Portfolio Manager	Service	Keeps a set of service offerings up to date and aligned to business needs
Service Level Manager	Service	Acts as the main interface between the business and the IT service delivery organization

APPENDIX C: KEY TERMS

Table C-1. Key Terms

Term	Definition
international standard	A baseline by which organizations all over the world can measure themselves against a known checkpoint. In IT Service Management, ISO/IEC 20000 is the recognized measure by which organizations can determine their readiness, effectiveness, and efficiency to deliver IT services.
IT Service Management (ITSM)	A general term that combines elements of process management with industry standard best practices. It provides an approach enabling organizations to consistently deliver high-quality IT services to meet business needs. IT Service Management addresses issues in the areas of procurement, outsourcing, strategy, implementation, operations, and ongoing delivery of services to the business. Often, the generic term "IT service management" refers to any one of several IT management frameworks, including MOF, ITIL, COBIT, Six Sigma for IT, or ISO/IEC 20000.
policy	A deliberate plan of action to guide decisions and achieve rational outcomes. (This definition deals with human-readable descriptions of desired behavior, not machine readable descriptions.)
process	Interrelated tasks that, taken together, produce a defined, desired result.
service management system/service management framework	An organized set of interacting, interdependent processes and functions that are planned, controlled, and implemented with the express purpose of allowing an organization to better control the consistent delivery of high-quality IT services.

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- Patricia Rytönen, *Volt Technical Services*
- Bryan Shoe, *Process Catalyst Solutions*