

Kerrie Meyler
Alexandre Verkinderen
Anders Bengtsson
Patrik Sundqvist
David Pultorak



with Kurt Van Hoecke, Travis Wright,
Maarten Goet, and Oskar Landman

System Center Service Manager 2010

UNLEASHED

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800 East 96th Street, Indianapolis, Indiana 46240 USA

System Center Service Manager 2010 Unleashed

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About the Authors

Kerrie Meyler, MVP, is the lead author of numerous System Center books in the Unleashed series, including *System Center Operations Manager 2007 Unleashed* (2008), *System Center Configuration Manager 2007 Unleashed* (2009), *System Center Operations Manager 2007 R2 Unleashed* (2010), and *System Center Opalis Integration Server 6.3 Unleashed* (2011). She is an independent consultant and trainer with more than 15 years of Information Technology experience. Kerrie was responsible for evangelizing SMS while a Sr. Technology Specialist at Microsoft, and has presented on System Center technologies at TechEd and MMS.

Alexandre Verkinderen, MVP, is a Principal Consultant and trainer at Infront Consulting Group, a Microsoft Gold Certified Partner. Alexandre is an industry expert in the systems management area, and actively consults to large organizations helping them architect, implement, configure, and customize System Center technologies by integrating them into their business processes. Alexandre founded the System Center Users Group Belgium, and was a contributing author for *System Center Operations Manager 2007 R2 Unleashed* (Sams, 2010). Alexandre was an early tester in the Service Manager 2010 TAP.

Anders Bengtsson is a Microsoft senior premier field engineer, focusing on System Center. He was involved in the Service Manager TAP with one of the largest Service Manager TAP customers. Anders has written a number of System Center training courses, including the Service Manager and Operations Manager advanced courses for Microsoft Learning. Before joining Microsoft, Anders was a Microsoft MVP from 2007-2010 for his work in the System Center community, including more than 10,000 posts in news groups and forums. Anders has presented and worked at numerous Microsoft conferences and events, including Microsoft Techdays and Microsoft TechEd EMEA.

Patrik Sundqvist is a senior consultant working as a solution architect, focusing on developing automated solutions for IT processes on the System Center platform. Since the early beta of Service Manager, Patrik has worked with the Service Manager product team to develop community solutions for Service Manager. Over the past eight years, Patrik has developed custom System Center solutions for some of Europe's largest companies. Patrik was also one of the authors of the level 400 Service Manager course for Microsoft Learning. He often speaks at Microsoft events and is a member of the Microsoft Extended Expert Team.

David Pultorak is founder and principal consultant of Acceleres, specializing in Service Manager implementation and training, and Pultorak & Associates, providing ITIL and MOF consulting and training. David is a recognized leader in the field of IT Service Management with more than 24 years of IT experience. He has completed numerous Service Manager implementations and has contributed to ITIL, MOF, and COBIT. His most recent books are *Microsoft Operations Framework* (2008) and the *ITIL V3 Foundation Exam Study Guide* (2011).

About the Contributors

Kurt Van Hoeke, managing consultant at inovativ Belgium, focuses on the System Center product suite, including Service Manager, Configuration Manager, and Opalis. Kurt has been working with Service Manager beginning with the beta versions and has a number of Service Manager deployments to his credit.

Travis Wright is a Microsoft Senior Program Manager on the Service Manager engineering team responsible for incubating new projects/partnerships and enabling customers and partners to harness the full potential of Service Manager. Travis was previously responsible for many different areas of the Operations Manager product, going back to Operations Manager 2000.

Maarten Goet, MVP, is a managing consultant at inovativ in The Netherlands, helping customers to implement System Center, Forefront, and Hyper-V solutions. As a strong supporter of the community, Maarten regularly speaks at conferences such as the Microsoft Management Summit and TechEd North America.

Oskar Landman, MVP, a consultant at inovativ in The Netherlands, has more than ten years of IT consulting experience. Oskar focuses on Service Manager and Operations Manager, designing complex monitoring solutions and writing management packs and reports.

Dedication

To Eric, Dawn, and Ethan.

Acknowledgments

Writing a book is an all-encompassing and time-consuming project, and this book certainly meets that description. The authors and contributors would like to offer their sincere appreciation to all those who helped with *System Center Service Manager 2010 Unleashed*. This includes Acceleres for dedicating lab resources, Bryan Anthony for his assistance with the lab, Sean Christensen and Chris Lauren of Microsoft, Peter Quagliariello, Anders Ravnholt, and Pete Zerger.

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Email: feedback@sampublishing.com

Mail: Neil Rowe
Executive Editor
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Foreword

Service Manager 2010 is without a doubt the most customizable and extensible product in the System Center suite. The ability to customize and extend the product is enabled by the common technology platform born in Operations Manager that now underlies other Microsoft products such as System Center Essentials, Windows InTune, Virtual Machine Manager, and now Service Manager. The platform was substantially extended in the Service Manager 2010 development lifecycle to meet the requirements of an IT service management product. Thus, while Service Manager 2010 itself is a first generation product, the core platform is fifth generation, preceded by MOM 2000, MOM 2005, Operations Manager 2007, and Operations Manager 2007 R2. This book is all about how to harness the power of that rich platform and unleash Service Manager.

In the past four years, I have visited with many customers and heard the requirements of many others by speaking with our implementation partners. One requirement is universal—customizability! Some customers will use Service Manager for incident management. Other will use it just for change or configuration management. One thing for certain: No two customers have the same processes, the data storage requirements, or regulations. No one uses Service Manager as is out of the box without substantial modification.

When I first joined the product team, there was a debate whether Service Manager was a platform or a set of solutions—configuration, incident, change, and problem management. Knowing every customer was different; the platform proponents wanted to spend most of our time building a highly customizable platform and very little time providing for solutions out of the box. The solutions proponents felt we just needed to build a product with lots of features designed around ITIL or MOF best practices. The reality—we needed to do both! We needed to provide immediate value out of the box to enable customers to adopt ITIL and MOF, but also needed to be adaptable to match the customers' processes and configuration management database (CMDB) data storage requirements.

Early in the development cycle, Microsoft hired David Pultorak (one of the authors of this book) to write a marketing white paper about Service Manager 2010 for an upcoming Microsoft Management Summit. Being new to the product, David stopped by to get an idea of what it was all about. On my whiteboard, I drew two boxes, one on top of the other. I labeled the bottom box "Platform" and the top box "Solutions." Inside the Platform box I drew several smaller boxes and labeled them model-based database, extensible data warehouse, reporting platform, role based security, notification platform, workflow engine, application programming interface (API), and management pack infrastructure. In the Solutions box, I drew circles for configuration, incident, problem, knowledge, and change management. (Today, as we are working on Service Manager 2012, I would add circles for release and service request management.) David produced a Visio diagram of this whiteboard drawing that was included in the white paper and many

other PowerPoint presentations. I still see this diagram in many presentations today. It is the essence of Service Manager—customizable platform + solutions on top.

This book covers each of the solutions provided out of the box in detail, but more importantly shows you how to use the platform capabilities to extend and adapt the solutions to meet your requirements.

You can do just about anything with Service Manager provided you have the skills and knowledge to do it. One Microsoft product engineering team adapted Service Manager to be their test automation platform. They use the workflow engine to automatically execute their tests, and extended the database and user interface to store and display test results and to schedule test runs. Custom reports were written on top of the data warehouse and reporting platform to show test results over time. The possibilities are endless, and I'm excited to see what possibilities become realities after you become more knowledgeable and skillful from reading this book.

Service Manager is what it is today because of an extraordinarily dedicated engineering team. Developers, testers, and program managers alike put in many, many long nights and weekends to deliver Service Manager as soon as possible, with the highest quality and maximum capability possible. It has been my pleasure and honor to work with these passionate professionals these last four years. As individuals, we may not always have agreed on how to do something or what was most important, but one thing was always for sure—we all cared deeply about the product we were working on and wanted to do the best we could for our customers and partners. Out of that constant conflict of ideas and opinions, we forged a v1 product—something not many people can lay claim to. I'm proud of the product we built and even prouder of the way we all worked diligently together as a team. I'm very excited about the future of Service Manager as we continue to build on top of a solid foundation.

Lastly, I would like to thank the co-authors and contributors of this book—all Service Manager superstars in the community. Service Manager would not be as successful as it is today without them sharing their knowledge freely in the community and helping others get started. Gathering all of their collective knowledge into one place like this book will make it even easier to do amazing things with Service Manager.

See you out there in the Service Manager community!

*Travis Wright, Senior Program Manager
Microsoft Corporation*

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Introduction

In May 2010, Microsoft announced the release of Service Manager 2010. This first version of the product was a long time in coming, having been revamped considerably since early testing in 2006 as the previously code-named Service Desk product. Service Manager 2010 rounds out System Center's focus on Information Technology Information Library (ITIL) and Microsoft Operations Framework (MOF) by adding centralized incident, problem, and change management capabilities to the product suite. Service Manager's level of integration with ITIL and MOF is unique in the System Center suite.

Service Manager is unique for other reasons: the fact that it touches so many different types of individual in an organization, and because of its high level of integration with other products in the System Center suite in addition to Active Directory. Service Manager 2010 offers the potential of an integrated configuration management database (CMDB) through connectors with Active Directory, Operations Manager, and Configuration Manager, enabling it to become a centralized repository of information. By unifying knowledge across System Center, Service Manager can help IT align to business needs while lowering time to resolution. Service Manager provides built-in processes based on industry best practices for incident and problem resolution, change control, and asset life cycle management.

Service Manager delivers integration, efficiency, and business alignment of the data center's IT services by

- ▶ Optimizing processes and ensuring their use through templates guiding IT analysts through best practices for Incident, Process, and Change Management
- ▶ Reducing resolution times by cutting across organizational silos, ensuring the right information from incident, problem, change, or asset records is accessible through a single pane
- ▶ Extending the value of the Microsoft platform with automated generation of incidents from alerts and coordinating activities among System Center products
- ▶ Enabling decision making through its data warehouse, integrating knowledge from disparate systems, delivering out-of-the-box reporting, and providing flexible data analysis through SQL Server Reporting Services

When work first commenced on this book, Service Manager 2010 was released and had its first service pack in the offing. Microsoft planned to round out the product with a R2 release in 2011, which would also be covered as part of the book. Things changed. At the 2011 Microsoft Management Summit, Microsoft announced that Service Manager 2010 R2 would be renamed and released as Service Manager 2012, thus aligning the Service Manager product cycle with the rest of the System Center suite. This announcement led the authoring team to rethink the book, removing topics planned with the R2 release and

material that would be changing significantly with the 2012 version. *System Center Service Manager 2010 Unleashed* focuses on the core components of Service Manager 2010: its relationship to MOF and ITIL, integration with other System Center components, design, planning, installation, how it works, and extensibility. Because of the high level of integration with ITIL, you will find that a number of chapters focus on process.

This book is divided into six sections:

Part I, “Service Manager Overview and Concepts,” introduces service management and the product and discusses its history, concepts, its relationship to MOF and ITIL, and architectural design. These topics are discussed in Chapter 1, “Service Management Basics,” Chapter 2, “Service Manager 2010 Overview,” Chapter 3, “MOF, ITIL, and Service Manager,” and Chapter 4, “Looking Inside Service Manager.”

Part II, “Planning and Installation,” steps through product design, planning, and installation. Chapter 5, “Designing Service Manager,” discusses envisioning and planning for Service Manager 2010, including licensing considerations. Chapter 6, “Planning Complex Configurations,” delves into more advanced physical design considerations; and Chapter 7, “Installing Service Manager 2010,” steps through the installation process.

Part III, “Service Manager Operations,” focuses on Service Manager operations and processes in your environment. This includes Chapter 8, “Using Service Manager,” Chapter 9, “Business Services,” Chapter 10, “Incident Management,” Chapter 11, “Problem Management,” Chapter 12, “Change Management,” and Chapter 13, “IT Management: Governance, Risk Management, and Compliance,” which discusses the IT GRC Process management pack.

Part IV, “Administering Service Manager,” includes Chapter 14, “Notification,” and Chapter 15, “Service Manager Security.” These chapters discuss those key functionalities and their use in Service Manager.

Part V, “Beyond Service Manager,” looks at going beyond the box. As Travis Wright mentions in the Foreword, Service Manager is extremely customizable and extensible, with no two installations using it the same way. This section includes Chapter 16, “Planning Your Customization,” Chapter 17, “Management Packs,” Chapter 18, “Customizing Service Manager,” Chapter 19, “Advanced Customization Scenarios,” and Chapter 20, “Reports, Dashboards, and Data Analysis.”

By this time, you should have at your disposal all the tools necessary to become a Service Manager expert. **Part VI** of the book includes two appendixes. Appendix A, “Reference URLs,” incorporates useful references you can access for further information, and Appendix B, “Available Online,” is a guide to supplementary resources offered with the book that you can download from Pearson’s website at <http://www.informit.com/store/product.aspx?isbn=0672334364>.

Throughout, this book provides in-depth reference and technical information about System Center Service Manager 2010, as well as information about other products and technologies on which its features and components depend.

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CHAPTER 3

MOF, ITIL, and Service Manager

This chapter discusses the service management processes specified in the Microsoft Operations Framework (MOF) and Information Technology Information Library (ITIL) supported by System Center Service Manager, including Incident, Problem, Change, and Configuration Management. The focus is to describe the goals and objectives, key terminology, concepts, and activity workflows of these processes, because they are the ideas behind the functionality found in Service Manager. Understanding these ideas is critical to ensuring a successful implementation that provides the intended value to the business, for several reasons:

- ▶ Understanding the goals and objectives of each process is necessary to ensure that your implementation helps your organization achieve them.
- ▶ Without a firm understanding of these concepts, you put your implementation at risk—either by spending cycles trying to sort the distinctions between terms such as *Incident*, *Problem*, *Known Error*, and *Service Request* or through missteps, rework, or suboptimal implementation because these concepts aren't understood.

This chapter includes a high-level mapping of MOF and ITIL concepts to Service Manager, but detailed implementation guidance is left for subsequent chapters.

IN THIS CHAPTER

- ▶ Introduction to MOF and ITIL
- ▶ Incident Management
- ▶ Problem Management
- ▶ Change Management
- ▶ Configuration Management

Introduction to MOF and ITIL

Service Manager is different from Microsoft's other System Center products. It is more like SAP, which encodes business processes in software. For Service Manager, those processes are a subset of the service management processes of MOF and ITIL: Incident, Problem, Change, and Configuration Management. That is why an understanding of MOF and ITIL is particularly useful for Service Manager, and why getting full value from the product requires not only adequate technical knowledge but also an appropriate level of knowledge of the processes the Service Manager product supports.

The sections that follow describe what MOF and ITIL are, the value they provide, and how to get started with them in the context of implementing Service Manager.

MOF and ITIL Are IT Service Management Frameworks

Both MOF and ITIL are service management frameworks. *Service management* is the concept of organizing and presenting Information Technology (IT) to the business as a set of services. MOF and ITIL employ a set of interrelated terminology, concepts, and process workflows based on best practices for supporting and delivering services to the customers and users. MOF and ITIL are models for how to run IT as a service provider (as opposed an IT organization that is technology centric and views itself and conducts its business primarily as one that cares for and feeds technology).

MOF and ITIL are written guidance specifying how to organize and manage around a set of services to optimize value for customers and users of those services. An enormous corollary to this idea (at least for the IT organization) is that to consistently and sustainably provide the levels of service the business needs, IT must have the wherewithal it requires to deliver those services consistently. The intention here is to do something good both for IT and the customers and users it serves.

BUSINESS SERVICES IN SERVICE MANAGER

Service Manager's business service definition functionality directly supports the idea of managing IT as a service provider with defined services supported by IT processes.

Through it, Service Manager provides a place for you to define services and to describe their components and how they relate to one another—as a basis for managing Incidents, Problems, Changes, and configuration items (CIs).

Here is an example of how an IT organization's approach will differ if they are technology centered versus service centered:

- ▶ With a technology-centered model, the organization and what it does and provides for its customers and end users is organized around technology (for example, Microsoft Exchange).
- ▶ In a service management model, this is organized around messaging.

This is more than just semantics. A messaging service consists of Microsoft Exchange along with a number of other associated components and mechanisms such as service level agreements (SLAs) required to consistently deliver a service to customers and users at the expected levels of quality. These things might be missed or go unmanaged when the focus is just on the technology, and might then result in an overall lower quality of service.

Think about the difference between how a company that offers messaging as a service over the Internet and how a traditional IT shop offers it, and you start to get the idea of service management. If you are provisioning messaging over the Internet, you must

- ▶ Determine the services you want to provide. You might have different service packages with different features (email, instant messaging, teleconferencing, shared workspaces, LiveMeeting, and so on) in each package.
- ▶ Establish service level packages (different levels of features and support for each service package), such as the level of availability, capacity and performance, security, and service continuity (disaster recovery).
- ▶ Set pricing and establish charging models and mechanisms for each service and service level package combinations.
- ▶ Present your services (including quality of service and cost) in a catalog to customers and potential customers so that they can easily understand which services and service level packages are right for them.
- ▶ Separate the service provided (messaging) from the technologies that make it possible (the specific infrastructure and applications; for example, Microsoft Exchange and Lync) so that you have agility and choice in how to provide the service.

Why might an internal IT shop want to adopt such a model? For the same reasons a vendor would:

- ▶ The value of the service is made more explicit, so it is clear that the service either has or does not have the right price-to-performance characteristics.
- ▶ It is obvious what is and is not included in the service.
- ▶ Available service levels and their cost are made explicit.
- ▶ Most important for the service provider, what it takes (the wherewithal required) to provide the services consistently to agreed service levels is made explicit in terms of infrastructure, applications, organization, contracts, vendors, processes, subservices, and service levels. The roles and responsibilities of the provider and users and customers are also made explicit.

Put another way, organizing around services helps you avoid overcommitting—for example, to providing five nines (99.999%) of availability on a network technology that can provide only 99% uptime. Organizing around services forces you to think through what people, processes, and technology are required for each service to meet its objectives and to staff and procure accordingly (or, with explicit agreement from your customer, to back off to a lesser service with lower service levels).

The idea is that each service is managed for value individually and that IT can make explicit and strive to put in place and maintain the resources required to consistently make, and keep, good commitments. A related idea is that the focus keeps the end in mind (the service itself: what is provided and to what service level) rather than the means (the particular technologies chosen). This separation of ends and means is vital in allowing both IT and the organization it serves to have the level of agility modern businesses require. This is the essence of any IT management framework, which is as follows:

- ▶ To provide key principles, models, and organizing principles that provide a better capability than alternatives for ensuring customers get what they need
- ▶ For IT to have all the underpinning mechanisms to ensure the levels of quality of service required and agreed for each service, including infrastructure, applications, and processes

Organizing around services brings together what the customer needs (the features and the levels of service) with the technology wherewithal required to deliver on that need consistently. In the end, your aim with service organizations is to be able to say, with confidence, “Yes, Mr./Ms. Customer, this can be done, and this is what it costs.” A service management framework helps you get there because it provides the set of concepts and constructs that work together to make it happen.

One such useful service management construct is the service map. *Service maps* provide a graphical way to define the components and dependencies of a service that are inputs into the service catalog and SLAs for the service. Microsoft, via service maps, provides a great start with IT Service Management (ITSM). These maps are logical diagrams of services, which are useful for understanding and communicating the components that make up services and how they relate to one another. They provide documentation of architecture, are useful in troubleshooting, and function as a basis for automating services and their associated monitoring and control processes. For example, you can take a service map and translate it into a distributed application in Operations Manager (OpsMgr). This is described in Chapter 9, “Business Services.”

TIP: BEST PRACTICES FOR CREATING BUSINESS SERVICES IN SERVICE MANAGER

Creating distributed applications in Operations Manager is the preferred way to establish business services in Service Manager. It is important to note that only the name of the IT service is synchronized across the connector. If you want the relationships to show between CIs in the service, you must export the distributed application from Operations Manager and import it into Service Manager.

The big bet of MOF and ITIL is that organizing around and managing to a set of services is a superior way to provide value to customers.

Imagine two IT organizations with the exact same resources—IT infrastructure, applications, people (including vendors and suppliers), money, agreements, contracts, documents, and anything else needed to deliver an IT service—yet with widely different results in terms of the value they create for their customers. What makes the difference in their results? A key factor is how they organize themselves and manage the important things (what they do, manage, and deliver), including the processes they follow, how they use knowledge, the people they have, and how they leverage them to create value in the form of goods and services.

MOF and ITIL specify, among other things, that IT service providers should

- ▶ Create a service catalog (see <http://blogs.technet.com/b/randy/archive/2005/07/25/408206.aspx>).

A *service catalog entry* is a service description that helps communicate what the service is, what it costs, and how performance is measured. Table 3.1 is a portion of a service catalog entry for messaging for a fictitious company (Odyssey.com).

TABLE 3.1 Service Catalog Excerpt (Adapted from MOF Job Aid “SIP Service Catalog”)

Service Name	Messaging Service
Service Description	Odyssey’s IT department hosts the entire messaging service infrastructure, enabling Odyssey employees to send and receive email and to synchronize their work schedules.
Business Alignment	This service is funded as part of Odyssey’s IT operational budget. The service benefits all users by providing a centralized facility for synchronizing data from Microsoft Outlook, email filtering and caching, web-based access to email, and free/busy schedule synchronization.
Business Owner	The Human Resources (HR) division is the business owner for this application.
Service Qualification	This service is available to all regular employees of Odyssey, at all locations worldwide. Each data center has a Microsoft Exchange server that provides for the servers at that location, and each of these servers is connected to the corporate backbone for data synchronization.
Service Manager	Dave Pultorak.
Service Initiation Contact	Service is initiated by the HR department for each new employee given approval to use company’s email.
External Dependencies	Internet communication facilities, VeriSign security certificate services.

TABLE 3.1 Service Catalog Excerpt (Adapted from MOF Job Aid “SIP Service Catalog”)

Service Name	Messaging Service
Service Elements	Service desk/incident management. Application availability and metric reporting. Application SLA. Hours of service. Problem management. Tier 2 escalations and proactive root-cause analysis. Change management. Change management and control. Technology upgrades. Patch management. Security management. Security protection: intrusion detection, locked-down security policies. Internet-specific security protection: antivirus, antiphishing, antispam. Additional service features. Proactive health monitoring. High-availability management. Nightly server data backup.

- ▶ Present themselves to the business through that service catalog (using customer-oriented terminology abstracted from the technology used to deliver the service—for example, using *messaging* as the name for the service instead of Microsoft Exchange).

- ▶ Define service levels in SLAs.

An SLA is an agreement between an IT service provider and customer specifying the service, service level targets, and provider and customer responsibilities. Table 3.2 is an example of service quality measurements and performance targets excerpted from “MOF Job Aid - Service Level Agreement,” available from Microsoft.

- ▶ Use these and other mechanisms required to manage the quality, cost, and ultimately the value provided to the business by every service.

Although this version of Service Manager does not support service catalogs or SLAs, it is important to understand what they are because they are at the center of the service management ecosystem that Service Manager supports.

You can get examples and templates for service catalogs, SLAs, and other service management mechanisms in the “MOF Job Aid” collections, available for download from Microsoft.

TABLE 3.2 SLA Excerpt

Service Quality Measurements

Measurement	Definition	Performance Target
Service availability percentage	Percent of time the application is available during normal schedule minus the impact time from any scheduled or unexpected events	Target percentage. Example: 99.6%.
Incident resolution time	Time between recording and resolution of an incident: Priority 1 = < 30 minutes Priority 2 = < 2 hours Priority 3 = < 4 hours	X% of transactions of type Y to be completed within Z minutes or hours or days. Example: 95% of all Priority 1 email incidents are resolved within 30 minutes.
Root-cause analysis reports	Production of reports describing root cause of a particular incident or problem	Timeframe for report to be delivered. Example: 100% of all root-cause analysis reports will be delivered within 24 hours of when the incident occurred.
SLA review	Review of service to determine whether any changes are required	% of reviews to be completed. Example: 100%.

TIP: FOCUS ON ENDS, NOT MEANS, TO ENSURE BUSINESS VALUE FROM SERVICE MANAGER IMPLEMENTATION

You can argue about the level of formality required from organization to organization. You can use different terminology. You can vary from the basic processes described in this chapter. In the end, however, you cannot argue against the primary objectives of MOF and ITIL processes described on Table 3.3. This is an important point because the processes are means and the primary objectives are outcomes or ends that you seek by investing in them. They are, in the end, how you will be measured by the business and how you should measure yourself and others. This is vital to understand and keep in mind while implementing the Service Manager tool and the processes it underpins—what organizations are aiming to gain is some end typically satisfied or described by the primary objective.

Said another way, you are not done when the tool is stood up. You are done when the use of the tool is producing the measurable improvements the organization set out to gain when choosing to implement the tool.

TABLE 3.3 Subset of MOF and ITIL Processes That Underpin Services

Process	Responsible For	Primary Objective
Incident Management	Managing the life cycle of all Incidents, where an <i>Incident</i> is an unplanned interruption to an IT service or a reduction in the quality of an IT service. Failure of a CI that has not yet impacted a service is also an Incident. The primary objective of Incident Management is to return the IT service to users as quickly as possible.	Minimize the business disruption of incidents by getting individual instances of a user or service being down back up and running as quickly as possible.
Problem Management	Managing Problems, which are the root cause of one or more Incidents, by ensuring these are identified and that workarounds or permanent fixes are found.	Get to the root cause of problems. Know and be able to articulate clearly what the top problems are, what you have done so far to mitigate them, and what you will do next.
Change Management	Controlling the life cycle of all Changes, where a <i>Change</i> is the addition, modification, or removal of anything that could impact IT services. The scope should include all IT services, CIs, processes, documentation, and so on. The primary objective of Change Management is to enable beneficial Changes to be made with minimum disruption to IT services.	Minimize the business disruption of Changes and ensure you can answer this question: What changed?
Configuration Management	Maintaining information about CIs required to deliver an IT service, including relationships among CIs, where a configuration item is any component that needs to be managed to deliver an IT service.	Ensure a logical model of the live environment is defined, controlled, maintained, and kept accurate as a source of fact-based management of IT services and to comply with corporate governance requirements.

Determining the Value of MOF and ITIL

MOF and ITIL terminology, concepts, and mechanisms are embedded in Service Manager, and the product supports service management services and processes. This is one very good reason to care about MOF and ITIL. However, there are other reasons, which are important for you to consider as a basis for understanding and articulating the value the product can bring (and to whom). What is in it for you, your team, your IT organization and its suppliers, your customers and end users, and the business? Consider WIIFM (*What's In It For Me?*) for MOF and ITIL for all stakeholder audiences: the IT individual contributor, the IT team, the IT organization, its suppliers, its customers and end users, and the business as a whole:

- ▶ **For the individual contributor:** Service management certification is becoming a “basic and expected” criterion and is also a top certification in terms of salary. (Much of what IT professionals do each day is handle changes, troubleshoot incidents, seek the root cause of problems, and so on.) The training for that lies in MOF and ITIL. Other professions have long-established common terminology (accountants, for example, don’t argue over what an *asset* or *liability* is) and mechanisms (accountants can expect to see a general ledger when they start work at a company). MOF and ITIL provide these for IT professionals.
- ▶ **For the IT team:** It is not unusual for teams of highly intelligent individuals to devolve into a communal idiot, especially when a significant issue arises. (Just about anyone who has spent more than a few minutes in IT can attest to this!) For teams to function well, they need shared ideas and standards for “how things are done around here.” MOF and ITIL provide these for IT teams.
- ▶ **For the IT provider:** The IT provider as a whole needs “a” method to organize, and that method needs to be fully worked out with enough interlocking concepts and supporting templates and examples to stand on its own legs. It also helps (greatly) if these methods are adopted widely, because it then can be expected that new starters and vendors who come and go need less ramp-up time. MOF and ITIL provide these.

LEARN CONCEPTS BEHIND THE TOOL TO HELP ENSURE THE RESULTS YOU SEEK BY IMPLEMENTING IT ARE REALIZED

By far, the most important reason to care about MOF as it pertains to Service Manager is that MOF and ITIL are the concepts behind the configuration parameters. Experience in implementing ITSM tools shows that where people (and tooling implementations) get stuck is the concepts behind the tools.

Service Manager is like SAP: It’s not just software, it is a new mindset and new way of working (service management), with its own set of processes, key principles, models, and terminology. There is a certain entry-level understanding of these you need to configure and use the tool effectively. You can’t just sit down and play a board game without understanding the layout of the board, the pieces, the play, and rules, however basic. Similarly, you and your organization will make a grave error if you just install the tool and shout “mission accomplished,” or just as bad, try to shoehorn the tool into your old ways of thinking and working.

Said another way, as with SAP, if your organization tries to jam its old way of working into the tool, results will be suboptimal, and everyone will be sorry. The resulting tool configuration will be suboptimal, as will the use of the tool. The end result will be the value the organization sought to gain by implementing the tool (remember, the “ends in mind” or primary objectives in Table 3.3?) will not be fully realized. There is an old saying in service management circles: A fool with a tool is still a fool. You need to understand the concepts behind the software.

MOF and ITIL Compared

Table 3.4 compares MOF and ITIL along a number of key dimensions. You can use it as a starting point for determining where to invest your time in learning more about these frameworks.

TABLE 3.4 Comparison of MOF and ITIL

Features	MOF	ITIL
Form factor and cost	Publication. MOF is available for free download.	Publication. ITIL publications are available in book form and a variety of other formats for purchase.
Training and certification	Both MOF and ITIL have training and certification paths. MOF is limited to one course and certification at the Foundation level.	ITIL has a Foundation-level certification, along with Intermediates, all the way up to Expert- and Master-level certification.
Mapping to generally accepted IT management frameworks	Both MOF and ITIL provide mapping to other generally accepted IT management frameworks, including each other as well as ISO 20000 and COBIT. Both support these generally accepted frameworks and even provides a map to them. So, you can be assured that what you do with MOF and ITIL will not be out of line with other frameworks.	
Cost, features, restrictions	MOF is free to download and use, and includes not just guidance but also examples and templates, with creative commons licensing.	ITIL is owned by the U.K. Office of Government Commerce, with associated restrictions and costs for use.
Writing style and purpose	MOF is written in a checklist, prescriptive style, to be applied directly. It features clear outcomes, key questions, inputs, outputs, goals, and measures in a concise, relevant checklist style. This is a refreshing departure from more academic treatments of service management ideas.	ITIL is written in a textbook style, describing service management activities, deliverables, processes, functions, roles, key concepts, and models, with comprehensive coverage and many more pages of core content than MOF.

TABLE 3.4 Comparison of MOF and ITIL

Features	MOF	ITIL
Intention	MOF provides navigation into Microsoft's service management assets—the additional guidance, training, solution accelerators, services, and products—that help you implement service management concepts on the Microsoft platform <i>and</i> the products and technologies that make up that platform. Because the Microsoft platform is a key part of most IT shops, you need to understand what Microsoft has to offer, and MOF helps organization these assets so that you can quickly discover, grasp, and apply them.	ITIL is technology agnostic.
Content (processes, functions, and management reviews)	MOF covers a set of processes and functions, and includes management reviews, as driven by Microsoft's ecosystem of customers and partners	ITIL includes processes and functions as driven by the membership of the IT Service Management Forum (itSMF), the ITIL user group.

The conclusion here is that although there are differences between ITIL and MOF, and to some extent because of these differences, some knowledge of both MOF and ITIL are necessary as background and context for a successful Service Manager implementation.

IMPLEMENTING SERVICE MANAGER (THE TECHNOLOGY) IS ONLY PART OF WHAT IS NECESSARY IN A SERVICE MANAGEMENT TOOL IMPLEMENTATION

It is vital to understand the service management triad introduced in Chapter 1, “Service Management Basics:” people, processes, and technology. Although this is an old saw, it is a good one. The key point here is that implementing service management requires effort and action in all three dimensions. Standing up the tool is only one-third of the equation. You must also organize and train people to understand the concepts behind the tool and the processes it supports to encourage the new way of working. The Service Manager product is only part of the equation. Only a portion of what needs to be implemented lies within the tool. The rest lies in people (what’s between their ears and what new behaviors they take on) and in processes. For more information, see Chapters 10, “Incident Management,” 11, “Problem Management,” and 12, “Change Management.”

Here are some examples: To implement Change Management, you have to decide policies on what is and is not a major, minor, or significant Change; and what qualifies as a standard Change or an emergency Change. You have to decide whether you are going to have a CAB, who will be on it, and how often they will meet. You must decide who owns and who manages the Change process and what reports will be generated (and by whom, for whom, at what interval, and to what end).

Much of this lies outside the tool (technology) in people and processes, and only some is directly supported by the tool, and yet it is all important and part of what needs to be considered, decided, and delivered in a service management tool implementation.

Getting Started with MOF and ITIL

This section outlines some ideas and resources for getting started with MOF and ITIL. Once you have a clear vision of what you want to do with MOF and ITIL, it is important to know how to get started.

Take the following steps to get started with MOF (additional information available at <http://www.microsoft.com/mof>):

- ▶ Download MOF core content. Skim the contents so that you get a feel for what is included and then keep it near for reference. Read the MOF overview to familiarize yourself with MOF, and read the MOF Glossary to understand the terminology.
- ▶ Download and review the IT Pro Quick Start Kit for a great introduction to MOF, including podcasts, PowerPoint files, and training and certification information.
- ▶ Download the “Getting Started with MOF” implementation guide and read it to determine your highest potential, most relevant jumping-off point for getting started.
- ▶ Download “Bridging from MOF Guidance to Microsoft Products - A Companion Guide” and read it to understand how Microsoft products support MOF IT service management concepts.
- ▶ Review and download other MOF guidance and job aids as you see fit where there is a direct hit for a problem or opportunity you see on the job.
- ▶ Optionally, take an MOF Foundation course and pass the MOF Certification examination.

Here are some ways to get started with ITIL:

- ▶ Read “An Introductory Overview of ITIL V3,” from the IT Service Management Forum to get a feel for ITIL’s structure and content.
- ▶ Read Van Haren Publishing’s excellent *ITIL V3: A Pocket Guide*, which provides process details left out of IT Service Management Forum’s “An Introductory Overview of ITIL V3,” which is more concerned with providing a high-level overview of the service life cycle.
- ▶ Download and review the ITIL Glossary to understand the terminology.

- ▶ Take an ITIL Foundation course, and take and pass the ITIL Foundation examination.
- ▶ Optionally, read the five core ITIL publications. These books are available from a wide variety of sources and in a number of formats, such as PDF, eBook, hardcopy publication, and HTML-based DVD.
- ▶ Optionally, take additional ITIL courses and examinations leading to ITIL Expert or Master status.

MOF and ITIL Processes Supported by Service Manager

MOF and ITIL specify a set of IT processes deemed necessary to ensure consistent quality of delivery of IT services. The core set of processes tend to be those most closely associated with end users (that is, the processes that if missing or broken tend to evoke loud complaints most quickly). This version of Service Manager supports the most important end user-facing processes: Incident, Problem, Change, and Configuration Management.

The following sections discuss these processes, looking at the following for each process:

- ▶ Definition, goals, and objectives
- ▶ Key terminology
- ▶ Why the process matters (its value)
- ▶ Key performance indicators (KPIs)
- ▶ Reporting
- ▶ Scope
- ▶ Integration with other processes and functions
- ▶ Process activity workflow
- ▶ Key roles and responsibilities
- ▶ Key inputs and outputs
- ▶ High-level considerations for implementing with Service Manager

The key decisions to make when implementing the processes include people and process decisions that in some cases sit outside the Service Manager tool and in other cases drive configuration values for the tool.

Incident Management

Incident Management refers to the process responsible for managing the life cycle of all Incidents, where an *Incident* is an unplanned interruption to an IT service or a reduction in the quality of an IT service. Failure of a CI (any component that needs to be managed to deliver an IT service, including IT services, hardware, software, buildings, people, and formal documentation such as process documentation and SLAs) that has not yet

impacted service is also an Incident. The primary objective of Incident Management is to return the IT service to users as quickly as possible. For more information, see Chapter 10, which covers Incident Management in detail.

Incident Management is the process of managing deviations from normal service, restoring normal service operation quickly with minimum business disruption, and getting individual Users back up and running. Incident Management utilizes Configuration Management data to enable efficient and effective resolution of Incidents and to identify where Change releases have caused Incidents.

The goal of Incident Management is to restore normal service operation as quickly as possible with minimum disruption to the business and to ensure that the best achievable levels of availability and service are maintained.

Objectives of Incident Management include the following:

- Restoring normal service as quickly as possible.
- Minimizing the negative impact of Incidents on the business.
- Ensuring that Incidents are processed consistently and that none are lost.
- Directing support resources where most required.
- Providing information that allows support processes to be optimized, the number of Incidents to be reduced, and management planning to be carried out.

Table 3.5 presents Incident Management key terminology.

TABLE 3.5 Key Terminology in Incident Management

Term	Explanation
Incident	Any event that is not part of the standard operation of a service and that causes, or may cause, an interruption to, or a reduction in, the quality of that service.
Problem	An unknown error, the underlying cause of one or more Incidents.
Known Error	A Problem for which a root cause and permanent fix or workaround are identified but where the fix has not been implemented.
Workaround	A temporary fix or technique that eliminates the customer's reliance on the faulty service component.
Impact	The likely effect on the business service, often equal to the extent of distortion of agreed or expected service levels.
Urgency	The speed of resolution required, based on impact and the business needs of the customer.

TABLE 3.5 Key Terminology in Incident Management

Term	Explanation
Priority	This is the relative sequence of resolution required, based on impact and urgency, and other relevant factors such as resource availability, and calculated based on impact and urgency.
Escalation	The mechanism that assists with timely resolution of an Incident. There are two types: functional escalation (transfer of an Incident between n-tier support departments) and hierarchical escalation (calling on management to assist in handling of an Incident).

Incident Management helps IT professionals, teams, and organizations achieve a critical outcome: minimizing the business disruption of Incidents by getting individual “hands on the keyboard”—users back up and running and restoring service as quickly as possible.

Because resources are to be allocated to the Incident Management process, the value of that process to the business has to be determined so that the resources allocated can be justified. To determine the value an organization places on Incident Management, consider the following:

- ▶ What mechanisms are in place to reduce the business disruption of incidents and help ensure user satisfaction, especially when multiple Incidents arrive at the same time?
- ▶ Who handles Incidents when they arrive, and what does good handling look like as measured by impact on user satisfaction? What are expected service levels and resolve times, and how do you ensure performance is satisfactory?
- ▶ How do you ensure quick, consistent resolution of Incidents and keep Incidents from getting lost?
- ▶ How can you organize around Incidents in a way that fosters the productivity of both users and IT analysts?
- ▶ How do you minimize the impact of Incidents on service quality, either by preventing them in the first place or minimizing their impact when they do occur?
- ▶ Who are the stakeholders of Incident Management? What is their stake?

The value of Incident Management should drive all further discussions and decisions on scope, priority, resources allocated to, and automation of the Incident Management process with Service Manager.

Reporting is a means of understanding and managing the performance of the Incident Management process. Although Service Manager includes out-of-the-box reporting functionality for Incident Management, you can look to MOF and ITIL for further guidance and what to report, when, and why (including the KPIs that are important to Incident

Management). This includes first-call fix rate, the number of Incidents raised based on a Change, number of escalated Incidents, number of Incidents not meeting SLA targets, and Operations Manager alert to Incident ticket ratio.

INCIDENT MANAGEMENT AND OTHER PROCESSES AND FUNCTIONS

The service desk plays a key role in Incident Management. The service desk is a function, organizational unit, or department. It is the end users' principal interface to the IT service provider, and handles Incidents and Service Requests. It provides an interface for the end user to other ITSM processes and plays the key role in the Incident Management process, recording and monitoring the progress of incidents and retaining ownership of incidents until they are resolved. However, it is important to understand that even though the service desk plays a key role in the Incident Management process, it is not equivalent to it. The Incident Management process involves many organizational units (for example, Tier 1+ support groups).

Problem and Change Management depend on Incident Management for Incident data. Incident Management depends on Change Management to control Incidents; the service desk function to own, record, and track Incident progress; Problem Management for root-cause resolution and Problem, Known Error, and workaround knowledge bases; and Configuration Management for an accurate configuration management database (CMDB).

The Request Fulfillment process is responsible for managing the life cycle of all *Service Requests*, which are requests from users for information, or advice, or for a standard change or for access to an IT service. An example is a request to reset a password, or to set up standard IT services for a new user. Service Requests are usually handled by a service desk and do not require a request for change (RFC) to be submitted. They have a separate workflow from Incidents and Incident Management, and often have different IT analysts involved in performing and reviewing the associated activities. This version of Service Manager does not directly support service request processing as its own separate workflow. See the System Center Engineering Team blog for some examples of how to customize Service Manager for service request processing.

Figure 3.1 shows the activities in the Incident Management process.

Incident Management roles include the following:

- ▶ The incident manager, who owns the results of the Incident Management process
- ▶ The service desk manager, who owns the results of the service desk function
- ▶ IT managers and analysts in first, second, and third-tier support groups, including specialist support groups and external suppliers
- ▶ The problem manager, for major Incident handling

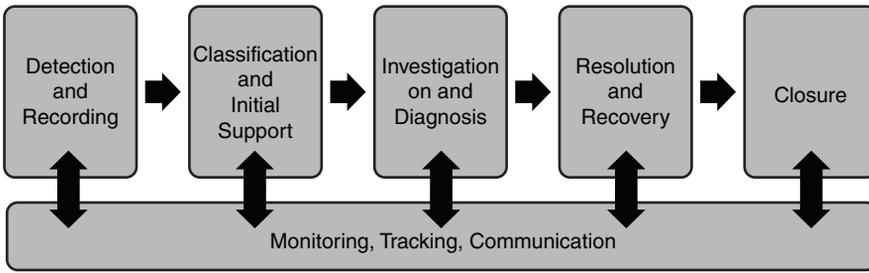


FIGURE 3.1 Incident Management process activities.



Table 3.6 shows inputs and outputs of the Incident Management process.

TABLE 3.6 Inputs and Outputs in Incident Management

Input	Output
Incident details (from the service desk, networks, or computer operations)	Updated Incident records, including resolution/workarounds.
Configuration details from the CMDB	RFC for Incident resolution.
Response from Incident matching against Problems and Known Errors	Update, resolved, and closed Incidents. Communication to customers.
Resolution details	Management information (reports): service reports, incident statistics, audit reports.
Response or result of RFC to effect resolution for Incident(s)	Update, resolved, and closed Incidents. Communication to customers.

The following key questions must be answered to drive decisions when implementing the Incident Management process with Service Manager:

- ▶ What is the value of Incident Management to the business?
- ▶ Which Incidents are within scope for the process, and what target resolution times have you identified?
- ▶ What values should be assigned to Incident record fields/drop-down (enumeration) list values?
- ▶ What are your Incident escalation procedures, and how do they relate to the Escalated tick box and Assigned to field in the Incident form?
- ▶ What Incident prioritization scheme will you use?
- ▶ How will you use the Incident process in conjunction with Problem, Change, and Configuration Management? What are the expected interfaces?

- ▶ What roles and responsibilities will be assigned for the Incident Management processes, and to whom?
- ▶ Will auto-ticketing be used (for example, for events trapped by Configuration Manager's Desired Configuration Management [DCM] or Operations Manager alerts)?
- ▶ What requirements do you have for automatic escalation or flexible routing of Incidents?
- ▶ Will the Self-Service portal and email ticketing be used to reduce inbound call volume?
- ▶ What requirement do you have for automated, rule-based Incident notification?
- ▶ Which metrics will you track, and which reports will you produce as a basis for managing performance? Will custom reports be required?
- ▶ Who needs to be informed and when throughout the life cycle of an Incident?
- ▶ What role will announcements and knowledge articles play in the Incident Management process?

Problem Management

Problem Management refers to the process by which Problems, which are the root cause of one or more Incidents, are identified and by which a workaround or a permanent fix is found, enabling the organization to reduce the number and impact of Incidents over time. Chapter 11 covers the Problem Management process in detail.

The goal of Problem Management is twofold—reactive and proactive:

- ▶ Being reactive minimizes the adverse effect on the business of Incidents and Problems caused by errors in the infrastructure, including supporting Incident Management, identifying and diagnosing Problems, escalating Problems, and monitoring Known Errors through the Change process.
- ▶ Being proactive preempts the occurrence of Incidents, Problems, and, including identifying potential Problems, initiating Change so that Problems don't (re)occur, and tracking problems and analyzing trends.

Here are the objectives of Problem Management:

- ▶ Minimize the negative impact of problems on the business
- ▶ Identify and correct the root cause of problems

Table 3.7 lists the key terminology of Problem Management.

It is important to understand that a Problem is not the same as an Incident. A Problem is the root cause of one or more Incidents. Problems are unknown errors; once the cause is known, they are flagged as Known Errors.

TABLE 3.7 Key Terminology in Problem Management

Term	Explanation
Incident	Any event that is not part of the standard operation of a service and that causes, or may cause, an interruption to, or a reduction in, the quality of that service.
Problem	An unknown error, the underlying cause of one or more Incidents.
Known Error	A Problem for which a root cause and permanent fix or workaround are identified but where the fix has not been implemented.
Work-around	A temporary fix or technique that eliminates the customer's reliance on the faulty service component.

Similarly, the Problem Management process is related to but distinct from the Incident Management process, so much so that MOF and ITIL recommend against combining Incident and Problem Management in the same function because they have conflicting interests. The imperative of Incident Management is to get the service and user back up and running, whatever it takes. It is not to go after the root cause of multiple Incidents. Problem Management, on the other hand, pulls up the zoom level and focuses on the root cause of multiple Incidents, seeking to eliminate and minimize the negative business impact of them by going after the root cause and by sharing information about Problems, Known Errors, and Workarounds. These imperatives conflict because, for example, eliminating Problems typically results in a lower first-call closure rate, because a whole set of Incidents have been eliminated as a result of eliminating the Problem. Problem Management helps IT professionals, teams, and organizations achieve a critical outcome: getting to the root cause of Problems and knowing and articulating what the top Problems are, what has been done to advance them, and what will be done next.

Because resources are to be allocated to the Problem Management process, the value of that process to the business has to be determined so that the resources allocated can be justified. To determine the value of an organization places on Problem Management, consider these questions:

- ▶ What mechanisms are in place to reduce the impact of chronic Problems on service availability and reliability?
- ▶ What mechanisms are in place to reduce Incident volume and resolution time and the negative impact on the business for related sets of Incidents?
- ▶ What mechanisms are in place to reduce Change volume as driven by the need to address chronic Problems and the associated negative impact of on the business?
- ▶ How can you achieve a good balance between reactive root-cause analysis efforts and proactive efforts to preempt Problems in the first place?

- ▶ How can service availability be guaranteed if there are outstanding Problems left unresolved? What are the potential issues with having Problems bypassed and not actually resolved?
- ▶ How can you help ensure that the time spent on investigation and diagnosis of multiple related Incidents and their root cause is as productive as possible for IT analysts?
- ▶ What mechanisms are in place to permanently solve chronic or recurring issues and reduce their number and negative impact on the business over time?
- ▶ What mechanisms are in place to ensure organizational learning occurs so that each day isn't another "Groundhog Day?" What means do you have to feed the organization with historical data to identify trends, root-cause resolutions, and workarounds to prevent and reduce problems?
- ▶ What means do you have of ensuring quicker, more consistent Incident resolution and a better first-time fix rate at the service desk? Who is going to make sure the workarounds, Known Error records, and knowledge articles required for this exist, are current, and are made available to the service desk when it makes a difference for them?
- ▶ Who are the stakeholders of Problem Management? What is their stake?

The value of Problem Management should drive all further discussions and decisions on scope, priority, resources allocated to, and automation of the Incident Management process with Service Manager.

Reporting is a means of understanding and managing the performance of the Problem Management process. Although Service Manager includes out-of-the-box reporting functionality for Problem Management, you can look to MOF and ITIL for further guidance and what to report, when, and why. This can include top Problems, what has been done to advance them so far, and what will be done next, percentage reduction of repeat Incidents, and percentage reduction in SLA targets being missed that are attributable to Problems.

PROBLEM MANAGEMENT AND OTHER PROCESSES AND FUNCTIONS

It is important to understand the differences between Problem and Incident Management. The main goal of Problem Management is detection of the underlying cause of Incidents and their subsequent resolution and prevention. In some cases, this goal directly conflicts with that of Incident Management, where the objective there is to restore service as quickly as possible through a workaround rather than a permanent Change. Prevention of future interruptions rather than recovery speed is of primary concern, although the speed of recovery is also an important consideration.

Problem Management is depended on by Incident Management for root-cause resolution and to help identify trends and take remedial action. Problem Management depends on Incident Management for Incident data, Change Management for Changes to resolve Known Errors, and Configuration Management for CI data in the CMDB.

Figure 3.2 shows the activities in the Problem Management process.

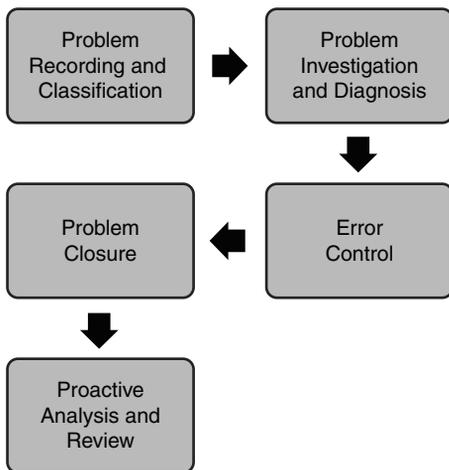


FIGURE 3.2 Problem Management process activities.

It is vital to identify who does what relative to Problem Management. Otherwise, there is no ownership, no one who can be held accountable for its results, and no or unclear responsibility for carrying out the process activities. Problem Management roles that you should make sure are identified and assigned in your organization include the following:

- ▶ The problem manager, who owns the results of the Problem Management, assigns Problems, and handles major Problems
- ▶ Support groups, which are second- and third-line support groups, specialist support groups, and external suppliers who own normal Problems, progress Problems through resolution, assign Problems to resolver group, create teams to resolve Problems, and monitor and track Problems and ensure resolution
- ▶ Problem resolvers, who are the IT analysts who investigate and diagnose Problems

Table 3.8 shows Problem Management inputs and outputs.

Several vital questions need to be answered to drive decisions when implementing the Problem Management process with Service Manager. Without getting these questions answered, you and the organization will get stuck somewhere along the way (in design, deployment, or operation of Service Manager) as you seek to accomplish the objectives set out by the business.

TABLE 3.8 Inputs and Outputs in Problem Management

Input	Output
Incident details	Known Errors
Configuration details	Fix/Workaround
Failed Change details	Management reports
Defined workarounds	Major Problem reviews
Potential Problem reported	RFC
Trends reported	Updated and closed Problem and Known Error records
Annual survey results	Improvements for procedures, documentation, training needs
Anecdotal evidence from users	

The following key questions must be answered to drive decisions when implementing the Problem Management process with Service Manager:

- ▶ What is the value of Problem Management to the business?
- ▶ Which Problems are within scope for the process, and what target resolution times have you identified?
- ▶ What values should be assigned to Problem record fields/drop-down (enumeration) list values?
- ▶ What is your policy and procedure regarding ticking the Known Error box in the Problem Form, indicating that the root cause of the Problem has been identified? In other words, who can do this, and what else do they need to do in conjunction with it (for example, update knowledge articles, make announcements, and close related tickets).
- ▶ What provisions have you made to ensure that bugs that come out of development are transferred into Service Manager as Problems and Known Errors along with any associated workarounds and knowledge articles when the systems are moved to production?
- ▶ What problem prioritization scheme will you use?
- ▶ How will you use the Problem process in conjunction with Incident, Change, and Configuration Management? What are the expected interfaces?
- ▶ What roles and responsibilities will be assigned for the Problem Management processes and to whom?
- ▶ What requirements do you have for correlation of multiple Incidents to Problems and related Workarounds, Changes, and knowledge articles, and what procedures will you adopt for resolving and closing Incidents when the related Problem is resolved or closed?

- ▶ Which metrics will you track, and which reports will you produce as a basis for managing performance? Will custom reports be required?
- ▶ What provisions have you made to ensure that a post-implementation review is made after major Problems?
- ▶ Who needs to be informed and when throughout the life cycle of a Problem?
- ▶ What role will announcements and knowledge articles play in the Problem Management process?

Change Management

Change Management refers to the process responsible for controlling the life cycle of all Changes, where a *Change* is the addition, modification, or removal of anything that could affect IT services. Change Management is about controlling proposed and actual Change to all CIs in the live environment and minimizing the business disruption from Changes the business requires. It is about ensuring the question “what changed?” can be answered effectively. For information about implementation of Change Management in Service Manager 2010, see Chapter 12.

The goals of the Change Management process are to ensure that standardized methods and procedures are used for efficient and prompt handling of all Changes, to minimize the impact of Change-related Incidents on service quality, and consequently to improve the day-to-day operations of the organization.

Table 3.9 presents Change Management key terminology.

TABLE 3.9 Key Terminology in Change Management

Term	Explanation
Change	Any new IT component deliberately introduced or modified to the IT environment that may affect an IT service level, the functioning of the environment, or one of its components.
Normal/Basic Change	Any deliberate action that alters the form, fit, or function of CIs (typically, an addition, modification, movement, or deletion that affects the IT infrastructure).
Standard Change	Change that is recurrent and well known and has been proceduralized to follow a predefined and relatively risk-free path and is the accepted response to a specific requirement of set of circumstances, where approval is effectively given in advance by policy.
Emergency Change	A Change that must be introduced as soon as possible to alleviate or avoid detrimental impact on the business.
Unauthorized Change	A Change made to the IT infrastructure that violates defined and agreed Change policies.

TABLE 3.9 Key Terminology in Change Management

Term	Explanation
Change category (major, significant, minor)	Measure of a Change's deployment impact on IT and the business. This is determined by measuring complexity, resources required (including people, money, and time), and risk of the deployment (including potential service downtime).
Major Change	Major impact or resources required or impact on other parts of the organization. The change manager seeks authorization from the CAB or top IT management for approval.
Significant Change	Moderate impact or moderate resources required. The change manager consults the CAB before authorizing or rejecting the change.
Minor Change	Minor impact and few resources required. The change manager authorizes or rejects, and informs the CAB.
Change priority	A change classification that determines the speed with which a requested Change is to be approved and deployed.
Configuration item (CI)	Any component of an IT infrastructure, including a documentary item such as a SLA or an RFC, which is (or is to be) under the control of Configuration Management and therefore subject to formal Change control.
Change record	This is a record containing details of which CIs are affected by an authorized Change (planned or implemented) and how. It is created from an accepted RFC.
Change log	Log of RFCs raised showing information about each Change; for example, its evaluation, what decisions have been made, and its current status (for example, raised, reviewed approved, implemented, or closed).
Change Advisory Board (CAB)	Cross-functional group set up to evaluate Change Requests for business need, priority, cost/benefit, and potential impacts to other systems or processes. The CAB makes recommendations for implementation, further analysis, deferment, or cancellation of Changes.
Emergency Change Advisory Board (ECAB)	A subset of the CAB who makes decisions about high-impact emergency Changes.
Change schedule or forward schedule of change (FSC)	A document that lists all approved Changes and their planned implementation dates. A change schedule is sometimes called a forward schedule of change, even though it also contains information about Changes that have already been implemented.
Request for change (RFC)	A formal proposal for a Change to be made. An RFC includes details of the proposed Change, and may be recorded on paper or electronically. The term RFC is often misused to mean a Change record or the Change itself.

Change Management helps IT professionals, teams, and organizations achieve a critical outcome: minimizing the business disruption of IT changes and ensuring the question “what changed?” can be answered.

Because resources are to be allocated to the Change Management process, the value of that process to the business has to be determined so that the resources allocated can be justified. To determine the value the organization places on the Change Management process, consider these questions:

- ▶ What mechanism do you have in place to ensure that you can handle spikes in the quantity and complexity of Changes efficiently, promptly, and consistently?
- ▶ What mechanism do you have in place to ensure that the change schedule and impact of Changes is visible and communicated to the business?
- ▶ What mechanism do you have in place to ensure that there is a balance between the business getting the Changes it needs when it needs them for agility/speed to market and IT ensuring Changes are planned, with adequate resourcing, fewer emergencies, fewer surprises, risk mitigation and contingency planning, and fewer disruptive and failed changes?
- ▶ What provisions have you made to ensure the productivity of users, customers, and IT analysts in relation to changes?
- ▶ What mechanism do you have to determine the number of Changes implemented in a given period, broken down by the reasons for the Change, by CI, by service, and so on? Do you know trends in RFCs and where they are coming from, such as the number of RFCs rejected, Changes driven by Incident, unauthorized Changes, Changes completed on schedule, Changes in backlog, Changes that go badly and must be backed out, and emergency Changes?
- ▶ What mechanism do you have in place to reduce the number of Problems and Incidents caused by Changes?
- ▶ What mechanism do you have to reduce the cost and effort required to make Changes, including the cost of failed Changes and associated rework? What provisions have you made to ensure estimated and actual time, cost, and resources required for Changes match?
- ▶ What is the negative impact on service quality of Changes, and what mechanism do you have to reduce it?
- ▶ What provisions have you made to ensure that poor Changes do not move forward, and that badly done Changes are reviewed after implementation so that mistakes are not repeated?

The value of Change Management should drive all further discussions and decisions on scope, priority, resources allocated to, and automation of the Change Management process with Service Manager.

Reporting is a means of understanding and managing the performance of the Change Management process. Although Service Manager includes out-of-the-box reporting functionality for Change Management, you can look to MOF and ITIL for further guidance and what to report, when, and why (such as the number and trend of Changes requiring back-out, unauthorized Changes, number of rejected Changes, and percentage reduction in downtime due to scheduled and unscheduled Changes).

The activities in the Change Management process are shown in Figure 3.3.

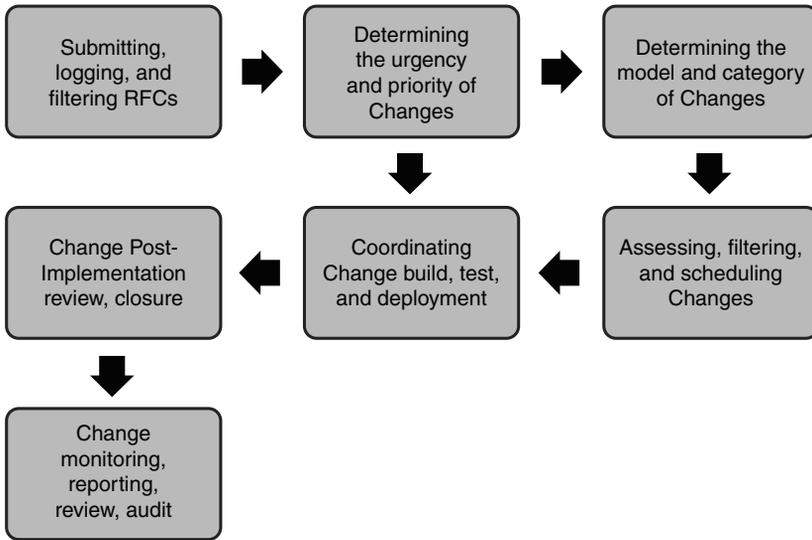


FIGURE 3.3 Change Management process activities.

CHANGE MANAGEMENT AND OTHER PROCESSES AND FUNCTIONS

Change Management is not the same as project change management. Change Management controls changes to CIs in the live environment. The project change management process controls changes within ongoing solution development projects. Although a close liaison between the change manager and development project managers is expected, Change Management and project change management are not the same.

Change Management depends on Configuration Management for raising RFCs, accurate CMDB information, the configuration management system, and contribution to Configuration and Change Management planning. Change Management is depended on by Configuration Management for the change schedule, RFC handling, communication of impact of Changes on service and CI availability, contribution to Configuration and Change Management planning, and maintaining the physical production environment in a controlled state so that it matches as closely as possible the logical model captured in the CMDB.

Change Management depends on Incident Management for raising RFCs, especially for break/fix situations and Change-related Incident status updates. Change Management

is depended on by Incident Management for the change schedule, RFC handling, urgent Change procedures and standard Change models, and maintaining the physical production environment in a controlled state so that the number of Incidents caused by Changes is kept to a minimum.

Change Management depends on Problem Management for raising RFCs and for Change-related Problem status. Change Management is depended on by Problem Management for the change schedule, RFC handling, a history of backed-out Changes, urgent Change procedures and standard Change models, and maintaining the physical production environment in a controlled state so that the number of Problems caused by Changes is kept to a minimum.

Table 3.10 lists roles in Change Management and associated activities as the Change process moves from start to finish.

TABLE 3.10 Change Categories and Descriptions

Role	Activity
Change initiators/requestors	Submits RFCs.
Change manager	Filters (assesses—for impact, resource (\$ and staff), and schedule requirements—and authorizes or rejects) RFCs. Accepted RFCs become Change records.
Configuration manager	Logs RFCs.
Change manager	Allocates initial priority to Change records.
Change manager	Chooses urgent, standard, or normal path for the Change.
Configuration manager	Updates Change log.
Change builder	Builds Change and devises back-out and test plans.
Configuration manager	Updates log with progress reports.
Independent tester	Tests the Change. If failure, it goes to the Change builder; if success, the process proceeds.
Configuration manager	Updates log.
Change manager	Coordinates implementation of the change.
Configuration manager	Informs users, updates log.
Change builder	If implementation fails, implements the back-out (that is, the reversion to a previous trusted state).
Configuration manager	Updates log.

TABLE 3.10 Change Categories and Descriptions

Role	Activity
Change manager	Reviews Change. If failed, the procedure restarts; if success, closes the Change.
Configuration manager	Updates log, associates any new RFC with an old one, and closes the Change in the log.

Table 3.11 describes key inputs and outputs for Change Management.

TABLE 3.11 Change Management Key Inputs and Outputs

Input	Output
RFCs	Change schedule or forward schedule of changes (FSC)
Incidents	CAB minutes
Problem reports	Management reports, Change statistics Change post implementation review (PIR) reports Change process review and audit reports

The following key questions must be answered to drive decisions when implementing the Change Management process with Service Manager:

- . What is the value of Change Management to the business?
- . What is the appropriate scope of Change Management (which CIs should be under control of Change Management)?
- . Who can initiate Changes, and is there any prior screening or approval required (for example, by the submitter’s manager) before an RFC can be submitted?
- . What mechanism do you have in place to screen Changes, and under what circumstances are RFCs rejected?
- . What fields and drop-down (enumeration) list values will you have in your RFC form?
- . What prioritization scheme will be used for Changes?
- . What is your Change model? (In other words, what is your policy for what will pass as a standard, major, minor, significant, emergency, or unauthorized Change?)
- . What Change categories will you use?
- . Will you have a CAB and an ECAB, and if so, who will be members, when will they meet, and what is the agenda?
- . Who will manage the change schedule and make sure it and the impact of Changes on service availability are communicated effectively?
- . Will the Self-Service portal be used for Change submittal?

- ▶ What requirement do you have for automated, rule-based change notification?
- ▶ Which metrics will you track, and which reports will you produce as a basis for managing performance? Will custom reports be required?
- ▶ What role will announcements and knowledge articles play in the Change Management process?

Configuration Management

Configuration Management refers to the process responsible for maintaining information about CIs (where a *configuration item* is any component that needs to be managed to deliver an IT service, including IT services, hardware, software, buildings, people, and formal documentation such as process documentation and SLAs) required to deliver an IT service, including their relationships.

The goal of Configuration Management is to provide accurate information about the IT infrastructure, including CIs and how they relate to other CIs, and identify, control, maintain, and verify the versions of all CIs in the IT infrastructure.

The objectives of Configuration Management are to bring all IT services and infrastructure components, with their associated documentation, under control, and to provide an information service to facilitate the effective and efficient planning, release, and implementation of Changes to the IT services.

Although Service Manager does not include workflows for the Configuration Management process, it does support Configuration Management functionality, through the Configuration Items workspace and the connectors, which provide an instant CMDB (database) and configuration management system (CMS) (tool) functionality.

Table 3.12 lists the key terminology of Configuration Management.

TABLE 3.12 Key Terminology in Configuration Management

Term	Explanation
Configuration Item (CI)	A component of an IT infrastructure, or an item associated with an IT infrastructure, that is or will be under the control of Configuration Management. CIs include not just hardware and software, but documentation, procedures, and role charts. CIs vary in complexity, size, and type, from an entire system to a single software module or minor hardware component.
CI attribute	A piece of information about a CI. Examples are name, location, version number, and cost. Attributes of CIs are recorded in the CMDB.

TABLE 3.12 Key Terminology in Configuration Management

Term	Explanation
Configuration management system	A set of tools used to manage an IT service provider's Configuration data. Compare with the CMDB; the CMS is the tool or system that provides access and presents data; the CMDB is the single logical database that may consist of multiple physical databases that stores the CI data.
Configuration management database	A database that stores all relevant information about IT components (CIs) throughout their life cycle.

Configuration Management helps IT professionals, teams, and organizations achieve a critical outcome: knowing what CIs they have, where they are, what their status is, and how they relate to the other CIs they have.

Because resources are to be allocated to the Configuration Management process, the value of that process to the business has to be determined so that the resources allocated can be justified. To determine the value the organization places on the Configuration Management process, consider these questions:

- What is the value of knowing the detailed configuration of the IT infrastructure is at any given point in time? How can this help in resolving Problems or performing system upgrades?
- What mechanism do you have in place to ensure you have good information on the number, type, location, and status of CIs you have and how they relate to one another, and when there is drift between what is and what should be, to correct this?
- What mechanism do you have in place to track growth, capacity, and rate of change of CIs?
- What mechanism do you have in place to keep your Configuration under control, with fewer errors and less unauthorized equipment and better support for the delivery of quality IT services and more cost-effective service provision?
- What provisions have you made to reduce the number of Change failures due to inaccurate Configuration data and improve Incident resolution time due to availability of complete and accurate Configuration data?
- How do you ensure you have accurate information about CIs and control of them, and how are they updated when changed?
- What provision have you made to ensure adherence to legal (such as licensing), security, and regulatory obligations related to CIs? To reduce the instances where unauthorized software is in use causing risk to the business and Incidents caused by unauthorized CIs?
- How does your knowledge and lack thereof of your Configuration help or hinder your financial and expenditure planning?

- ▶ You cannot recover what you do not know about. How comfortable are you that your current Configuration is known so that it can be recovered in the event of a disaster?
- ▶ How in control are you of the number of versions of CIs that are in use, and what is the impact does that have on your ability to enforce IT security and protect your information assets?
- ▶ How certain are you that the CI data you have enables you to perform impact analysis and schedule Changes safely, efficiently, and effectively?
- ▶ Do you have a mechanism in place to provide Problem Management with data on CI trends so that the chronic issues can be identified and eliminated?
- ▶ To what extent does control of your Configuration or lack thereof contribute or take away from cost-effective provision of quality IT service?

The value of Configuration Management should drive all further discussions and decisions on scope, priority, resources allocated to, and automation of the Configuration Management process with Service Manager.

Reporting is a means of understanding and managing the performance of the Configuration Management process. Although Service Manager includes out-of-the-box reporting functionality for Configuration Management, you can look to MOF and ITIL for further guidance and what to report, when, and why. This can include percentage reduction in unauthorized CIs detected, percentage reduction of CIs out of compliance with desired Configuration baselines and regulatory compliance, and reduction in the number of failed Changes resulting from incorrect CI information.

CONFIGURATION MANAGEMENT AND OTHER PROCESSES AND FUNCTIONS

Configuration Management is depended on by Incident, Problem, and Change Management for accurate Configuration information as a basis for impact and trend analysis data.

Configuration Management depends on Incident, Problem, Change, and Release Management for accurate Configuration information as the basis for “to be” CI data.

Figure 3.4 shows the process activity workflow for Configuration Management.

Configuration Management roles include the following:

- ▶ The incident manager, who owns the results of the Incident Management process
- ▶ The service desk manager, who owns the results of the service desk function
- ▶ IT managers and analysts in first-, second-, and third-tier support groups, including specialist support groups and external suppliers
- ▶ The problem manager, for major incident handling

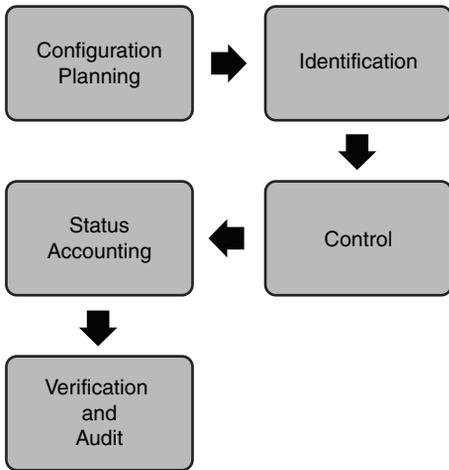


FIGURE 3.4 Configuration Management process activities.

Table 3.13 lists key inputs and outputs of Configuration Management.

TABLE 3.13 Key Inputs and Outputs for Configuration Management

Input	Output
Change Management requests to update CIs	IT service continuity management relationships for continuity plans
Release Management audit of infrastructure	Financial management for capturing key financial information on assets Change Management for identifying impact of Changes

The following key questions must be answered to drive decisions when implementing the Configuration Management process with Service Manager:

- ▶ What is the value of Configuration Management to the business?
- ▶ What CIs are within scope for Configuration Management, and what CI levels (depth of detail on CIs) are to be kept for each?
- ▶ What CI attributes must be tracked and what CI record fields and drop-down (enumeration) list values will you require?
- ▶ What are your CI naming conventions?
- ▶ What will your CMDB design include? What will be brought over from Active Directory (AD), Operations Manager, and Configuration Manager? Will you need to extend the schema to allow for additional fields, or purchase a third-party product such as Provance to get the functionality you need?

- ▶ Who will own the Configuration Management process?
- ▶ Which metrics will you track, and which reports will you produce as a basis for managing performance? Will custom reports be required?
- ▶ What provisions have you made to ensure a PIR is made after major Problems?
- ▶ What role will announcements and knowledge articles play in the Configuration Management process?

Summary

A basic understanding of MOF and ITIL concepts will greatly enhance how quickly you get Service Manager going and how effectively you utilize it. How do MOF and ITIL map to Service Manager? They are the ideas behind the business service and Incident, Problem, Change, and Configuration Management processes in Service Manager. It is vital for you to understand these ideas and the goals behind them when planning, deploying, and using Service Manager, too, so that your organization can aim for these outcomes in their work with the tool.

This chapter covered MOF and ITIL, including what they are, their value, and how they map to the Service Manager product. It provided information about how to get started with MOF and ITIL. Consider this chapter context for what is to come in subsequent chapters, which will help you to map these concepts to Service Manager features and provide a reference for planning and deployment tasks at a more granular level.

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