Best Practice Insights

Focus On: ITIL® Service Design

Updated for ITIL 2011

bmcsoftware

This publication has been revised to bring the content up-to-date with IT Infrastructure Library® (ITIL®) 2011 by Anthony Orr. Orr is Director of Service Management and works within the Office of the CTO at BMC Software. He is one of the authors for the ITIL 2011 update and a senior ITIL examiner for APMG. Orr has more than 30 years of information technology experience.

We greatly appreciate the contributions of the following individuals to the original version of this publication:

Dag Blokkum
Ken Turbitt
Frederieke C. M. Winkler Prins

Note to Readers

This publication highlights key elements of the ITIL *Service Design* publication and includes commentary on important concepts from BMC ITIL experts. BMC commentary is highlighted in blue text.

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Foreword

You wouldn't design a house without considering every possible variable — the electrical system, square footage, lot size, number of rooms and windows, appliances, and so on. When you design a house, you start with a budget that addresses all of these factors. One of the most important considerations is looking at how you will automate and integrate the systems in your home (i.e., sprinklers, heating and cooling, lighting, etc.) to get the services you require based on your family's needs. And, as your family grows, you want to be sure your design can accommodate future expansion.

IT Infrastructure Library® (ITIL®) *Service Design* takes a similar approach to helping you design another type of "home" — the one that delivers and supports your company's business services. Using established design processes helps make sure that the IT infrastructure can provide services integrated with your business needs, and that it can fully support these services — now, and as your business grows. An important benefit of ITIL is that it helps IT professionals effectively manage and deliver reliable services. This translates to agility, increased revenue, improved productivity, lower costs, and greater customer satisfaction.

The *Service Design* publication covers the fundamentals of designing services and processes into your plans, and it provides a holistic design approach to help your organization deliver better services, more effectively. The publication reviews many central concepts in service design, such as service management, design principles, processes, service catalog management, and technology-related activities and considerations. It also covers how to set up your organization to support service design, as well as how to address the challenges and risks involved.

The templates in the Appendix sections of the *Service Design* publication are particularly beneficial because they provide details on what should be included in design documents and related materials. These templates include sample service level agreements (SLAs), operational level agreements (OLAs), and other key documents.

The *Service Design* publication also describes the importance of *Business Service Management* (BSM), an approach for managing IT from a business perspective. BSM focuses on enabling people and automating the management of technology and IT process workflow to deliver greater business value. Companies that make BSM a priority find that they can achieve significant business benefits. By combining organizational enhancements, best-practice IT processes, such as ITIL, automated technology management, and a shared view of how IT services support business priorities, BSM has helped companies transform how they manage IT to meet the demands of their business customers.

Chapter 1
Introduction

This chapter introduces principal concepts pertaining to *service design*. It focuses on designing services by taking a big-picture view of how those services will support your business strategy. Service design involves taking the *service strategy* developed in the ITIL lifecycle, gathering service requirements from the business, understanding the capabilities and resources required for delivery and support of the service, and then determining which IT resources will provide the integrated services. Service design also entails creating and coordinating design specifications for the assets that deliver the services. IT services should be designed together with the people, practices, processes, and policies that support them to help ensure success when services are introduced into the live environment through *service transition* (the next stage in the ITIL lifecycle).

Be sure to design IT services using the guidance provided in the *Service Design* publication. If services or processes are not part of the overall service design strategy, they will evolve without proper controls. This creates a reactive approach to conditions, resulting in added expense, chaos, and poor integration with the business.

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Chapter 2
Service Management as a Practice

Some of the points included in Chapter 2 of the *Service Design* publication are also discussed in the other ITIL publications, and many of the principles of service management have been previously covered in ITIL V2. So, what's new in the latest version? ITIL takes service management to the next level by discussing not only how IT must *align* itself with business objectives, but also how IT must be *integrated* with the business to truly provide the services the business needs.

Chapter 2 introduces definitions that provide a basis for the ITIL framework and presents concepts that are essential to service management success. Significant points stressed in this chapter are value creation, the importance of organizing for service management, and the service lifecycle. The overriding message is to think about how the services you provide are architected in the context of how service value is created and realized for your customers. Please refer to the ITIL glossary[4] for the definitions of the following terms: *service management, customers, users, suppliers, service, utility, warranty,* and *process.*

4 Ibid.

Chapter 1
Introduction

This chapter introduces principal concepts pertaining to *service design*. It focuses on designing services by taking a big-picture view of how those services will support your business strategy. Service design involves taking the *service strategy* developed in the ITIL V3 lifecycle, gathering service requirements from the business, understanding the capabilities and resources required for delivery and support of the service, and then determining which IT resources will provide the integrated services. Service design also entails creating and coordinating design specifications for the assets that deliver the services. IT services should be designed together with the people, practices, processes, and policies that support them to help ensure success when services are introduced into the live environment through *service transition* (the next stage in the ITIL V3 lifecycle).

Be sure to design IT services using the guidance provided in the *Service Design* publication. If services or processes are not part of the overall service design strategy, they will evolve without proper controls. This creates a reactive approach to conditions, resulting in added expense, chaos, and poor integration with the business.

You will want to have a good understanding of the following definitions, because these terms are used frequently in the *Service Design* publication. Definitions can be accessed at http://www.itil-officialsite.com/InternationalActivities/TranslatedGlossaries.aspx.

- "*Service management* is a set of specialized organizational capabilities for providing value to customers in the form of services."[1] IT services are aligned to, and support, business needs. A service management approach helps make the business more successful, reduces disruption, and lowers costs, while increasing revenue.

- A *service asset* is "any capability or resource of a service provider."[2] This includes IT infrastructure, applications, information, and the people who work with them. Your ability to deliver quality service depends on both the quality of the assets you acquire and how well you manage them.

- An *IT service* is "a service provided by an IT service provider. An IT service is made up of a combination of information technology, people and processes. A customer-facing IT service directly supports the business processes of one or more customers and its service level targets should be defined in a service level agreement. Other IT services, called supporting services, are not directly used by the business but are required by the service provider to deliver customer-facing services."[3]

The *Service Design* publication provides a broad and detailed overview of the five aspects of service design. These include:

- Service solutions for new or changed services
- Management information systems and tools
- Technology architectures and management architectures
- Processes
- Measurement methods and metrics

Standardize, Standardize, Standardize

Chapter 1 of the *Service Design* publication describes the value of ITIL and other frameworks, which represent standardized best practices, as opposed to internal, proprietary knowledge that is difficult to share, transfer, or adopt. The ITIL Core, for example, consists of five publications that provide guidance for an integrated approach required by ISO/IEC 20000, the standard for service management. The five publications include *Service Strategy, Service Design, Service Transition, Service Operation,* and *Continual Service Improvement*.

1 *ITIL English 2011 Glossary*, http://www.itil-officialsite.com/InternationalActivities/ITILGlossaries_2.aspx. See *Service Management*.

2 Ibid. See *Service Asset*.

3 Ibid. See *IT Service*.

Summary

As you read the *Service Design* publication, focus on integrating your activities with the business goals defined in your strategy, and not simply with IT goals. The right people, processes, products, and partners will help make that happen. For example, when you build your house, just as when you design services, you may have the best materials that money can buy; yet, if you don't have competent, collaborative carpenters and contractors, the results will disappoint you. And if the house, like the IT infrastructure, isn't well designed and the procedures aren't followed in the correct order, then you won't get the desired outcome from the procedures and the house won't suit your needs or your customers' needs for value — even if your carpenters are outstanding and you have all the right materials. There's no point in hiring the electrician to install a chandelier until there's a ceiling to hang it from.

Focus on integrating your activities with the business goals defined in your strategy, and not simply with IT goals.

It may seem obvious, but be sure to target as your top IT priorities the projects and services that have the greatest impact to the business. Some organizations may get sidetracked by giving priority to the group that is most vocal. By focusing first on business priorities, you can target areas that will yield the greatest return. Besides visible success, this could also allow your BSM initiative to become self-funding, where the return on investment of the first phase can be used to fund the second phase, and so on.

ITIL V2 discusses the importance of people, processes, and technology. ITIL updates these elements and adds a fourth to create the four P's: People, Process, Products (services, technology, and tools), and Partners.

Summary

Pay close attention to the sections on service management as a practice and service design principles. By doing so, you will ensure that your business design strategy provides direction and identifies constraints. These fundamentals will help you determine how to prioritize work in service design, figure out what to do with the information, identify the services you need to provide, and determine how to provide them. They will also help you understand where the SLA objectives fit in.

Keep in mind that if the services are useful and valuable, the business will continue to view IT as beneficial. On the other hand, if the services are not seen as valuable to the business, the IT organization may be in danger of becoming optional. Ask yourself: Are we focused on our customers' outcomes? Will my projects and activities positively influence the organization's financial aspects, such as return on investment (ROI) and the business value of the investment (VOI)? Will they help my company increase performance and growth and stay ahead of the competition? If the answer to these questions is "yes," the activities you are doing will enhance the business value of IT.

IT organizations should focus on architecting and designing their infrastructure to meet governance codes and business requirements. Getting back to the home design analogy, think about how all houses must be designed to a certain "code." In California, which is prone to earthquakes, people must follow a strict earthquake-resistant design. In Northern Europe, there are strict energy-efficiency codes. These can be viewed the same way as governance codes for the services IT provides. The architect and builder must adhere to these requirements just like IT organizations must adhere to codes and standards. For more information, refer to the guidance provided by COBIT (Control Objectives for Information and related Technology), explained in ITIL as well as at www.isaca.org.

Chapter 2
Service Management as a Practice

Some of the points included in Chapter 2 of the *Service Design* publication are also discussed in the other ITIL V3 publications, and many of the principles of service management have been previously covered in ITIL V2. So, what's new in the latest version? ITIL V3 takes service management to the next level by discussing not only how IT must *align* itself with business objectives, but also how IT must be *integrated* with the business to truly provide the services the business needs.

Chapter 2 introduces definitions that provide a basis for the ITIL framework and presents concepts that are essential to service management success. Significant points stressed in this chapter are value creation, the importance of organizing for service management, and the service lifecycle. The overriding message is to think about how the services you provide are architected in the context of how service value is created and realized for your customers. Please refer to the ITIL glossary[4] for the definitions of the following terms: *service management, customers, users, suppliers, service, utility, warranty,* and *process.*

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Stakeholders

Everyone in the organization should be considered a stakeholder for service management. Service is everyone's responsibility, no matter what role they play or how they play the role to deliver and support services for their customers.

External stakeholders — the customers, users, and suppliers — also should be considered. These stakeholders and the organizational stakeholders are an example of the agency principle.

Customers, both internal and external, need to be confident that you can effectively and consistently support their business strategies.

Utility of Service

Customers want to achieve business outcomes by using services that are fit for their purpose. The utility of a service must support customers' performance or remove a constraint. Customers can become very frustrated with a service that is fit for their purpose but lacks sufficient warranty for their use.

Warranty of Service

This chapter provides guidance on warranty of service, which you can communicate to customers in terms of commitments to the *availability, capacity, continuity*, and *security* of the utilization of services. These are the main process areas in service design.

- *Availability* means that the customer can use your service under the terms and conditions you have mutually agreed upon.
- *Capacity* ensures that the customer will be able to utilize the service at a specified level of business activity or that demand will be fulfilled at a specified quality level.
- *Continuity* guarantees that the customer will be able to use the service even if you experience a major failure or other unexpected event.
- *Security* means that the customer's utilization of services will be free of specific risks.

Many of the services IT provides are considered commodities. You create a competitive advantage when you are able to deliver a certain level of warranty to your customers.

Customers, both internal and external, need to be confident that you can effectively and consistently support their business strategies. Since service providers are constantly matching others' service offerings, you must constantly improve your value proposition to stand apart. Use one or more of the service management processes to drive these improvements.

Service Assets

According to ITIL, resources and capabilities are types of assets that organizations can use to create value for their customers. *Resources* are direct inputs to produce a service, while *capabilities* are the organization's abilities to utilize resources to create value. You can create differentiation and retain customers by developing distinctive capabilities that are difficult for your competitors to replicate.

Processes

Processes have inputs or triggers, defined actions and activities, and an output or specific results. Processes also have metrics and deliver primary results to a customer in the form of services. Capabilities and resources within or external to the organization enable processes. Processes should follow enterprise governance standards, and policy compliance should be built into them. Governance ensures that the required processes are executed correctly. Processes are executed by people and sometimes are enabled by technology implementations. When processes are collaborative and integrated appropriately, the output from one process can provide input to the next process for the service that is delivered or supported. Processes should also be efficient, effective, and economical for the services that the process supports.

Service Lifecycle

The service lifecycle is dynamic, as each stage of the lifecycle supports other stages. Specialization and coordination across the lifecycle are very important for the delivery and support of services. The service lifecycle should work as an integrated system that includes feedback mechanisms for continual improvement.

Look at the Big Picture

Every IT department has a limited set of resources. *Service design* makes you focus on the activities most important to the business and prioritize work according to business requirements. *Service management* emphasizes the need to take a holistic approach to design. Just as you wouldn't design a kitchen for a house without thinking about how it fits in with the dining room and other rooms nearby, you wouldn't design a new application in isolation. Instead, it's important to consider the impact on the overall service, the service portfolio and catalog, technology, processes, and metrics.

Processes must:

- Be measurable. If you can't measure something, how do you know you've succeeded?
- Provide specific results. You should be able to identify and count the results.
- Meet customer expectations. These should be supported by SLAs.
- Respond to a specific event. The process should be traceable to a specific trigger.

Business Value

Measuring and demonstrating value are related to linking design with business outcomes. Value can be expressed in a number of ways, including the following:

- Achievement of service levels from a business outcome perspective
- Delivery of business metrics supported by IT quality measurements in terms that IT and the business can understand
- Measurement of IT quality in business/user terms, such as customer achievement of outcomes and customer satisfaction (refer to the *Continual Service Improvement* publication for a survey and scorecards you can use)

Successful IT organizations make sure that design requirements are business and customer oriented, and meet business demands for continuous operation. They must also be cost-effective, secure, flexible, and managed with an acceptable level of risk under the current known constraints. In addition, these requirements must be designed with agility in mind, so that the systems can keep up with an increased demand in volume and with the speed of change.

> By focusing first on business priorities, you can target areas that will yield the greatest return.

Here's an example: A telecommunications company that employs nearly 6,000 people and maintains more than 10.5 million phone lines provides local and interregional long distance, data transmission, and network services. The success of the company's IT organization is measured by cost-effectively delivering optimal levels of service, while simultaneously keeping pace with complex and changing environments.

An increase in large volumes of data, complex client/server/Web architectures, and mission-critical business applications challenged the IT infrastructure. At the same time, an increase in business demand from user communities, new business models, and competitive threats challenged the business.

To meet these challenges, the company adopted a BSM approach using a private cloud to manage its IT infrastructure. The company's data centers are now interconnected, sharing resources, and using central views for monitoring, management, notification, and automation to make rapid decisions that support the business needs. The quality and the agility of service the company can offer customers have increased dramatically. With these improved service levels, the company is now able to integrate IT with the business objectives while serving a larger customer base, all without increasing overhead. The company can understand and predict how technology changes will impact the business and how changes in the business need will impact the technology infrastructure.

It may seem obvious, but be sure to target as your top IT priorities the projects and services that have the greatest impact to the business. Some organizations may get sidetracked by giving priority to the group that is most vocal. By focusing first on business priorities, you can target areas that will yield the greatest return. Besides visible success, this could also allow your BSM initiative to become self-funding, where the return on investment of the first phase can be used to fund the second phase, and so on.

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Keep in mind that if the services are useful and valuable, the business will continue to view IT as beneficial. On the other hand, if the services are not seen as valuable to the business, the IT organization may be in danger of becoming optional. Ask yourself: Are we focused on our customers' outcomes? Will my projects and activities positively influence the organization's financial aspects, such as return on investment (ROI) and the business value of the investment (VOI)? Will they help my company increase performance and growth and stay ahead of the competition? If the answer to these questions is "yes," the activities you are doing will enhance the business value of IT.

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Chapter 3
Service Design Principles

This chapter provides guidance on basic service design principles. It emphasizes the need to approach design in a holistic manner by looking at the entire service lifecycle and processes from the beginning. Some of the goals of service design include:

- Satisfying business objectives
- Designing services that can be easily developed and readily enhanced within time and budget constraints
- Designing efficient processes
- Identifying and managing risk
- Designing measurement methods and metrics
- Developing and maintaining plans and skills
- Contributing to the improvement of service quality

A Balancing Act

To help meet the changing needs of the business, focus your efforts on balancing the functionality you need with the resources available and the schedule you must meet to bring the service online, given both constraints and demands.

In the housing example, there is always a balance between budget and the size of the house, as well as a balance between quality and price. How quickly a house can be built depends on who you hire as a general contractor, the number of contracts, how well you communicate your needs with your contractor, the order in which tasks are completed, and the flexibility of the plans. Similarly, to effectively complete IT projects and balance the needs of the business customer, you need to ensure:

- Direction and oversight by a competent project manager
- Effective communication between IT and the business
- Availability to the designers of all the latest versions of IT plans and strategies
- Consistency of the architectural documents
- Flexibility of the architecture and designs to address your requirements
- An understanding of roles and responsibilities

The *Service Design* publication describes important considerations for identifying service requirements. The publication explains how to take a holistic approach that considers the service and its components and how to deliver the functionality needed. Remember that services should not be designed in isolation. Otherwise, they may not integrate well with certain applications. When designing services, be sure to consider the need to address specific areas of technology, such as components related to the infrastructure, environment (physical space, power, etc.), data management and control, and application management and control.

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Documentation and Design

Document information pertaining to the requirements of existing services — not just new services. This includes, but is not limited to, changes to existing services and how they will impact facilities, processes, dependencies, transaction volume, service levels, and so on. You should also be able to identify how new services will impact processes, facilities, transactions, future growth, service level requirements, and other areas. In addition, there must be a formal process for agreeing to and accepting these changes.

This chapter reviews the importance of assigning project managers to manage the requirements-gathering process for a new service or for a major change to an existing service. It also reviews the roles and involvement of stakeholders. All parties involved should have a clear understanding of the goals, how they will be accomplished, what services will be impacted, the way budgets and priorities are determined, how projects are signed off, and how IT will engage with the business.

There are many factors to consider in design activities, which are discussed in detail in this chapter.

Business drivers and needs will change during design and delivery stages. Consider functionality and resources for all stages of the service lifecycle. Follow a holistic approach. All mechanisms and functionality in the new service should be managed and improved through the life of the service to meet all of the agreed-upon service levels.

You'll need to assemble accurate information on business requirements and the changes that need to be made to existing services. You'll then need to determine if either a new service must be created or an existing one should be enhanced, modified, or removed. This information impacts changes on facilities, processes, service transactions, and SLA targets. Be sure to retain information on all of these requirements for new services, along with process dependencies, business cycles and seasonal variations, transaction levels, volume and types of users, and future growth. Identify and document the business justification, predicted level of change, and level of capability or support for the new services.

Collecting this information is the most important stage for designing and delivering new services or changing existing ones. In the home design analogy, you wouldn't even pour the foundation without considering the ground on which the house will rest and the buildings that will stand next to it. If you discover that the soil where you want to build your house is toxic or that the design is incompatible with surrounding homes (e.g., you want to build a three-story home while every house on the block is a one-level rambler), it may be necessary to go back to the drawing board and rethink the project. (Does the house meet your needs, and will it work with your constraints and demands, such as lot size, geography, and neighborhood?)

When you collect your data, make sure to get the appropriate signatures for approval and that you have a formal process for agreement and for accepting changes to evolving requirements. Be aware of the audit trail necessary for compliance and governance requirements.

Designing the Service Portfolio

The *service portfolio* is a critical management system for designed, operational, and retired services, and is described in detail in the *Service Strategy* publication. The service portfolio will help you understand:

- The pricing or chargeback models
- Your strengths and weaknesses, priorities, and risks
- How to allocate resources
- Why a customer needs to buy these services from you

The service portfolio contains details relating to the status of specific services within the organization. For example, these details could include information about requirements and how they are being analyzed, design and development issues, which services and related components have been retired, and so on. The service catalog becomes an integral part of the service portfolio.

Chapter 4
Service Design Processes

This chapter provides information for developing the primary ITIL processes that relate to design coordination, service catalog management, service level management, capacity management, availability management, IT service continuity management, information security management, and supplier management. In each section, the publication emphasizes how activities must be tied to business needs and how they must be adaptable to meet changing requirements.

Processes in the design phase should be clearly defined and documented. To avoid confusion, roles and responsibilities should also be defined very clearly. The service design processes within ITIL are summarized as follows:

- *Design coordination* ensures coordinated actions to support business outcomes.
- *Service catalog management* ensures that the catalog contains accurate information on all services that are live or scheduled to be taken into production.
- *Service level management* offers the ability to research and understand the requirements; negotiate, agree upon, and document IT service targets with the business; and then monitor and report on service delivery performance.

Refer to the *Service Design* publication for the information you should capture for each service in the service portfolio. Include details about the service name, description, status, criticality, business owners, IT owners, and other information.

Designing Technology and Management Architectures

Architectural design activities provide "blueprints" for the IT infrastructure to satisfy current and future business objectives. This section reviews the various enterprise architecture frameworks and discusses how the enterprise architecture is integrated with the business architecture. The enterprise architecture should include architecture for the following:

- Services
- Applications
- Data/information
- IT infrastructure
- Environment

This section also discusses the architects' roles and responsibilities in the IT organization, including the recommendation that they report to a senior enterprise architect. Key roles include:

- Business/organizational architect
- Service architect
- IT infrastructure architect

ITIL recommends that IT planners, designers, and architects understand the business requirements, underpinning services, future direction, and current technology, so they can develop appropriate IT architectures for now and the future. This chapter explains the importance of understanding the roles of processes and people, and of implementing solutions to automate these processes. This architecture should help support the end-to-end management of the technology used. Ideally, roles and processes should be aligned with business objectives.

> Take a realistic look at how your existing architecture can support a given service.

The *Service Design* publication cautions against over-designing, because when designs and architectures are too complex, they are more challenging to implement and support. Take a realistic look at how your existing architecture can support a given service. Go through the service design processes with the different architectures to make adjustments focused on one service (you will probably need to adjust the level of details in the service diagrams). Completing this process for each service is easier than performing it simultaneously for many services after you realize you need to adjust the level of detail. Sometimes it's best to design the minimum and evolve or enhance over time, again taking into consideration your constraints. Build your basic home today, but be prepared in your design to expand as necessary (more bedrooms, annexes, and so on) tomorrow.

When one approach works, you can use that method to extend the resources to other services. You likely will get bogged down quickly if you design processes for your complete infrastructure and services at once, so a service-focused approach is a better option.

When you build a house, you follow a natural sequence of architecting, designing, surveying, and excavating the lot. You build the basement or slab, and then you put up the frame, seal the exterior, and install the electrical and plumbing systems before you finish the interior. These processes cannot be completed simultaneously; you cannot build a house in a day and achieve the desired results. Unfortunately, some IT organizations try to approach their projects in an out-of-sequence manner. The results are often just as unpredictable as the "build-a-house-in-a-day" approach.

Designing Processes, Measurement Systems, and Metrics

ITIL describes processes as structured activities for accomplishing specific objectives. *Process control* focuses on performing processes effectively, efficiently, and consistently. It's important to document and control processes, because that makes them more consistent and manageable. Processes should be driven by objectives and include metrics reports and process improvement. They should have process owners, who are responsible for both the process and its improvement. Keep in mind that the objective isn't always to design "perfect" processes; what's more important is to make sure they are practical and have built-in improvement mechanisms.

Processes must be monitored and measured (the *Continual Service Improvement* publication contains a detailed overview of metrics and measurements). Four types of metrics are commonly used to measure how well a process is performing: *progress, compliance, effectiveness,* and *efficiency.*

ITIL recommends aggregating metrics into a *metrics tree* or *key performance indicator (KPI) tree* and to develop automated measurement systems based on this approach. (See the *Service Design* publication for a sample metrics tree based on a typical balanced scorecard.)

KPIs measure the business health of the enterprise and ensure all stakeholders are following a strategy and common goals. KPIs should:

- Provide quantifiable metrics
- Align with corporate strategic value drivers
- Perform predictably
- Cascade throughout an organization

The success of any performance management program is contingent on selecting correct, relevant KPIs.

While metrics show a number that reflects performance, KPIs put performance in context by setting thresholds, targets, and benchmarks to metrics. The success of any performance management program is contingent on selecting correct, relevant KPIs. For each process, specify an optimum number of KPIs that are easy to

comprehend and as actionable as possible. An owner — individual or group — must be associated with the KPI. Additionally, gain executive support to help overcome political obstacles.

This section offers guidance for automating measurement and aggregating metrics, and it discusses the need to provide a big-picture overview of the customer, business, innovation, and financial perspectives, and how IT is performing against objectives. This way of looking at metrics takes into consideration the service and customer metrics, individual process metrics, and individual components metrics. This section explains how dashboards should provide various views of information based on the role of the person accessing that information. The right dashboard can provide useful information about the performance of the organization and can be used to help in decision making.

Executive dashboards should aggregate and consolidate data into higher-level information on particular business services, such as order-entry or credit-application processing (see Figure 1 for a sample dashboard). Dashboards should correlate consolidated data across IT processes, such as incident, problem, change, and service level management. Doing so will support the ability of senior managers — whose responsibilities span multiple processes — to take a service-oriented view. Most importantly, dashboards facilitate IT management decisions from a business perspective by providing the views managers need to understand so they can meet their IT and business objectives.

Be careful what you measure, as the metrics will influence behavior — and not necessarily in a positive manner. For example, measuring average call time may tempt service desk agents to disconnect a line, even though the customer may not yet have provided all the information needed to solve the problem.

Data interpretation is also an art in itself. The introduction of service management processes may actually lead to an increase in the number of reported incidents. The reason for this could be that, previously, users never bothered to contact the service desk because they knew in advance that their issues would not be properly addressed.

Figure 1. Sample Dashboard

Business Service Management

With appropriate management architecture, the service management processes can facilitate services and service quality end-to-end to ensure close alignment with business objectives. As a result, the architecture will become better integrated with business requirements and IT management.

As technology becomes more integrated with business requirements, the processes will focus more on those requirements and become more service-centric. This chapter of the *Service Design* publication addresses how this approach will help break down technology silos. ITIL defines *Business Service Management* (BSM) as "the management of business services delivered to business customers. Business service management is performed by business units."[5]

5 Ibid. See *Business Service Management.*

As technology becomes more integrated with business requirements, the processes will focus more on those requirements and become more service-centric.

BSM enables IT components and services to be aligned with the goals of the business. BSM helps you prioritize activities based on business impact and urgency, and it helps you increase productivity and profitability. In addition, BSM supports governance requirements, facilitates innovation, improves service quality and customer satisfaction, and offers additional benefits.

ITIL also discusses the importance of having a totally integrated service catalog. The catalog is important for delivering BSM.

Consider these examples of the value of BSM across a broad spectrum of industries:

- A telecommunications provider increased revenue growth by bringing new end-customer services to market.
- An energy company reduced the risk of fines and penalties from regulatory agencies and can now satisfy 94 percent of system access requests within 24 hours or less.
- A large insurance company saved $4 million by reducing business application downtime and, at the same time, reduced customer impact from IT failures by 69 percent in the first year.
- A health care organization cut in half the time to restore service to the business after IT failures.

Service Design Models

The *Service Design* publication provides a useful checklist of the advantages and disadvantages of various service delivery strategies. The strategies cover *insourcing, outsourcing, co-sourcing, partnership* or *multi-sourcing, business process outsourcing, application service provision, knowledge process outsourcing, cloud,* and *multi-vendor sourcing*. The type of service delivery approach to use depends upon the unique needs of the organization. For example, an advantage of insourcing may include having direct control, while outsourcing may offer economies of scale as an advantage. Co-sourcing might expedite the time to market, while partnership or multi-sourcing might help to leverage expertise. Cloud will help with agility and on-demand service needs.

Before you decide to outsource, remember that you still need to manage the relationship. To do this effectively, you will need to monitor and measure anything that's outsourced. Avoid outsourcing where you can't influence the quality of service delivered.

Summary

IT is an essential part of the business and, as such, must be integrated and aligned with the business. Stay focused on what is needed to integrate IT objectives with business objectives. Most important, consider these objectives as a whole, and not in isolation. ITIL recommends considering people, processes, services, SLAs, infrastructure, suppliers, IT environment, application, and other factors when developing service designs that integrate IT and business priorities.

Chapter 4
Service Design Processes

This chapter provides information for developing the primary ITIL processes that relate to design coordination, service catalog management, service level management, capacity management, availability management, IT service continuity management, information security management, and supplier management. In each section, the publication emphasizes how activities must be tied to business needs and how they must be adaptable to meet changing requirements.

Processes in the design phase should be clearly defined and documented. To avoid confusion, roles and responsibilities should also be defined very clearly. The service design processes within ITIL V3 are summarized as follows:

- *Design coordination* ensures coordinated actions to support business outcomes.
- *Service catalog management* ensures that the catalog contains accurate information on all services that are live or scheduled to be taken into production.
- *Service level management* offers the ability to research and understand the requirements; negotiate, agree upon, and document IT service targets with the business; and then monitor and report on service delivery performance.

- *Capacity management* ensures the existence of cost-justifiable IT capacity.
- *Availability management* provides the ability to meet or exceed current and future business needs for the availability of all services in a cost-effective manner.
- *IT service continuity management* helps ensure that IT services are resumed within agreed-upon business timescales.
- *Information security management* facilitates the alignment of IT security with business security.
- *Supplier management* provides guidance on how to manage suppliers to deliver seamless quality of IT service to the business at the right price.

The primary focus of service catalog management is to have a single source of accurate information on the agreed-upon services and to make sure that the roles requiring this type of information have access to it.

Design Coordination

Design coordination ensures collaboration during the design stage of the lifecycle. All design activities and processes across the service project or service change are managed by a single point of control. A key deliverable from this process is consistent and quality solutions, designs, and service design package(s) (SDPs) that will deliver and support business outcomes.

The central principles in design coordination are balance and prioritization, and integration with project management. Balance and prioritization address the utility and warranty of the service as well as the needs of the service throughout its lifecycle. Integration with project management is especially important, because the project management specialization combined with the service design specialization helps to ensure success. Project management should also be aware of the dynamics of associating one project with another for the success of the service management program. For example, a configuration management database (CMDB) project on its own will provide value, but appropriately associating it with an incident management project will provide more value than the two projects alone.

Activities within design coordination are:

- *Define and maintain policies and methods:* Define a holistic approach for consistency and accuracy in designs.
- *Plan design resources and capabilities:* Produce the SDP and coordinate assets.
- *Coordinate design activities:* Establish oversight for efficiency and effectiveness.
- *Manage design risks and issues:* Include positive and negative risk management.
- *Improve service design:* Follow a continual improvement approach (see the *Continual Service Improvement* publication) and log all improvement ideas in a continual service improvement register.

Service Catalog Management

Service catalog management is an important concept. The catalog should list the operational services you have, why they are there, who owns them, which customers have signed up for them, and the desired business value of these services. It's a great idea to have a service catalog, but it won't do anyone much good unless it's managed and kept accurate.

The primary focus of service catalog management is to have a single source of accurate information on the agreed-upon services and to make sure that the roles requiring this type of information have access to it. A service catalog enables all areas of the business to have a common, consistent, and accurate view of IT services and the business services they support. Organizations can maintain and integrate their service portfolio and catalog as part of their service knowledge management system (SKMS), which includes a configuration management system (CMS) and one or more CMDBs plus other technology elements, such as tools that manage configuration data (see Figure 2).

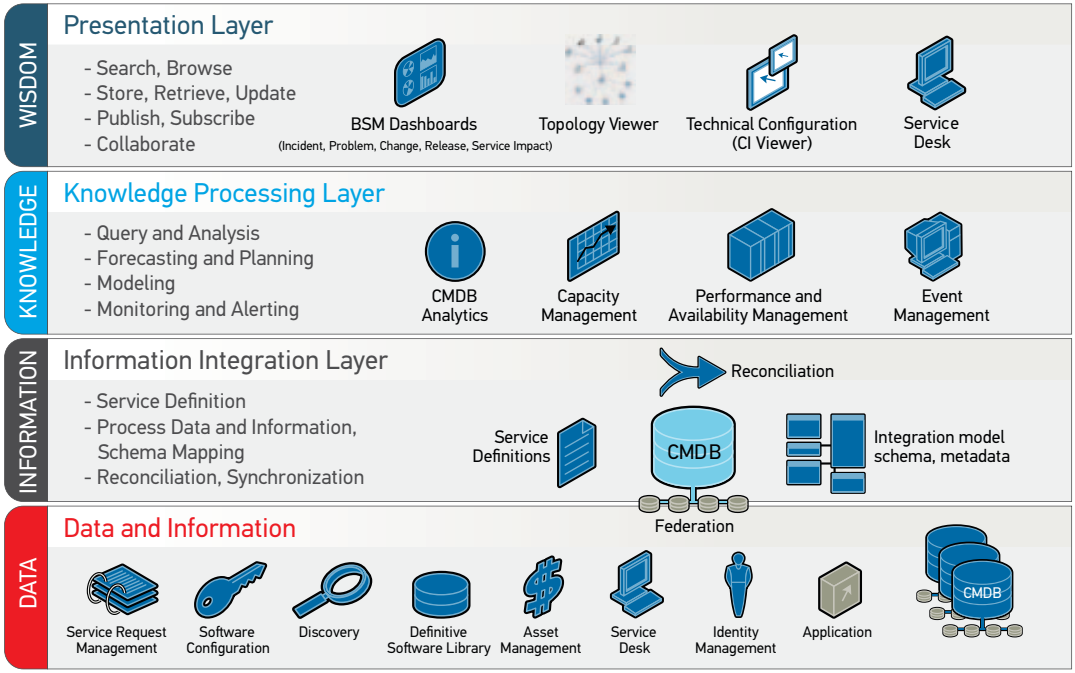

Figure 2. Sample Service Knowledge Management System (SKMS)

The service catalog supports two distinct types of services: *customer-facing services* and *supporting services*. Customer-facing services are IT services that support business outcomes from the customer perspective. Supporting services are IT services that underpin the customer-facing services, such as the database services,

network services, relationships, and processes or technical services. The service catalog can have multiple views depending on the decisions the consumer of the information needs to make. Example views are a business/customer service catalog view and a technical/supporting service catalog view. There can also be a view that enables service requests for cloud services, for example, which could be a subset of the complete service catalog.

ITIL explains that the service catalog facilitates the development of proactive, preemptive service level management processes that help organizations move to BSM. The service catalog as a component of a CMS is helpful for quickly assessing how changes and incidents impact the services delivered.

Going back to the house concept, think about how electricity is delivered. In the home, you see electricity from a customer's perspective by turning on the lights or using an appliance, but underlying these everyday events is the electrical grid that feeds power from many sources. What customers typically don't see is the catalog of utility companies and the power distribution system or the supporting services that must maintain a certain service level to provide users with the best-possible service.

The steps for the service catalog management process include:

- Make sure all relevant parties agree upon, and document, the service definition.
- Interface with service portfolio management to get consensus on what's in the service portfolio and service catalog.
- Create and maintain the service catalog in conjunction with the service portfolio.
- Work with the business and the IT service continuity management team to ensure that their requirements are supported by IT services contained in the business service catalog.
- Work with support teams, suppliers, and configuration management to define interfaces and dependencies that exist between IT services, components, supporting services, and configuration items (CIs) in the supporting services.

How can you make the service catalog management process successful? Actions to consider include ensuring that the catalog contains reliable information and that the business is aware of the services that are provided. IT must also understand the technology used to support services. Service transition problems can occur when the data in the catalog is inaccurate or not under rigorous change control, the information is too detailed and can't be maintained accurately, or the information is so high level that not enough detail is relayed.

Again, the house concept illustrates this point. All house builders use a "blueprint" drawing of the house created by an architect and certified by an engineer. The more details that are identified up front, the easier it is for the builder to do the job. Without a blueprint, the builder cannot create a house according to the customer's requirements.

Service Level Management

The *service level management* (SLM) process focuses on researching and understanding the requirements, and then defining, negotiating, agreeing upon, and documenting IT service targets with key people from the business. This includes monitoring, measuring, and reporting on how well the service provider delivered the agreed-upon service levels. When targets are appropriate and met, then the business and IT have a better chance of becoming aligned. Be cautious not to confuse the process of business relationship management (see the *Service Strategy* publication) with SLM.

SLM should manage expectations and perceptions, and this requires establishing and maintaining *service level agreements* (SLAs) for services. This also entails developing and managing *operational level agreements* (OLAs). An OLA represents an agreement between the IT service provider and the organization that helps initiate and configure services. For example, this might involve working with the team that supports the network service. (Note: Be sure to review the sample SLAs and OLAs in the Appendix section of the *Service Design* publication.) As always, ensure that the total of the OLAs support the SLA, or you can expect to miss the SLA. Also, keep in mind your contracts with external vendors or suppliers that support your SLAs. Sometimes organizations pay for more service than they need from an outside vendor or supplier. For example, an organization might pay for 24-hour, 7-days-a-week support when the customer of the service needs only 9-hour, 5-days-a-week support. Make sure you work collaboratively with supplier management.

> Don't underestimate the importance of measuring and improving customer satisfaction.

The *Service Design* publication describes what's required for designing SLA frameworks to ensure that IT can meet the customer requirements. This includes three types of SLAs: *service-based*, *customer-based*, and *multi-level*. ITIL also suggests combining these structures.

- A *service-based* SLA covers one service for all customers. This may be difficult to manage if, for example, there is one SLA for the email service but different targets for people connected via a high-speed LAN versus a lower-speed WAN line.
- A *customer-based* SLA covers all services used by an individual group. Agreements may include the payroll system, billing system, help desk, and so on.
- *Multi-level* SLAs involve different agreements based on the group. For example, a three-level structure could focus on the *corporate level*, which covers generic SLM issues; the *customer level*, which includes all issues for a particular customer group, regardless of the service used; and the *service level*, which covers all SLM issues relevant to the specific service for a specific customer group.

With the house analogy, most builders may have a generic SLA that they can build a house in 12 months. If anyone wants to have a house built faster, this request could impact all of the subcontractors' SLAs. Naturally, building a house in a quicker time frame is possible for the right price and the right customer. This adjustment is analogous to moving from a generic, multi-level SLA to a customer-specific one.

Don't underestimate the importance of measuring and improving customer satisfaction. For example, customer surveys, which can be automated and sent whenever someone closes a help desk ticket, can provide your IT organization with valuable insight into service performance.

Make sure to keep all agreements, underpinning contracts, and OLAs up-to-date. That means that they should be under change management control and reviewed periodically to ensure they are correct and align to the needs of the business. If the agreements are recorded as CIs within the CMS, it is easier to understand the impact of the changes and to implement them effectively. Many house builders, for example, have a standard set of "options" that a customer can add (e.g., upgrading the kitchen costs *x* amount of money and will take *n* days to install). These are well-understood options in their catalogs.

> Effective capacity management requires understanding both the IT and business environments and the potential need for new services.

This chapter reviews many of the activities related to SLM processes, and it discusses the need to develop contracts and build a relationship with the business. It also discusses the importance of fully understanding business, customer, and user objectives; sampling the customer experience; promoting services and communicating the business value; and developing and negotiating realistic SLAs and service level requirements (SLRs).

The chapter also covers a comprehensive list of SLM process outputs, or deliverables. These outputs include service reports, a service improvement plan, a service quality plan, document templates, SLAs, SLRs, OLAs, reports on OLAs and contracts, revised contracts, and other deliverables.

Capacity Management

The purpose of *capacity management* is to ensure that IT can provide cost-justifiable capacity to meet the current and future needs of the business, keeping in mind these may change often (for example, discounts or promotions on the Web store may increase traffic to the site). Using the home-building analogy, it's similar to ensuring you will always have enough electricity for your home, even if it means having a backup generator available in case of a power outage, or having enough bedrooms for your children today, with the ability to add more if your family grows.

This section reviews the capacity management process, how this process impacts the business, and the activities involved. It covers the different aspects of capacity management, demand management, modeling, application sizing, and trending. It also reviews how capacity management relates to information management, and the challenges and risks involved in capacity management.

Effective capacity management requires understanding both the IT and business environments and the potential need for new services. With the right processes, you will be able to determine which components to upgrade and when to do this, as well as how much the upgrade will cost (and whether the cost is justified). Capacity management can be used to forecast the impact of events (such as a spike in the number of end users during a critical business period) before they happen. With the right strategy in place, you will be able to plan for the costs and resources required, and balance supply against demand.

Capacity management gets input from a number of sources, including information pertaining to the business, service, and IT; component performance and capacity; financial details; service performance issues; relationship information from the CMDB; and other areas. In return, capacity management captures information in the capacity management information system (CMIS), creates the capacity plan, and provides information pertaining to service performance; workload analysis; capacity; forecasts; and thresholds, alerts, and events. A cloud computing strategy can help IT organizations deal with the fluctuation in demand for IT capacity.

Capacity management for a Web store means making sure there's enough capacity for normal traffic, as well as preparing for variations based on the time of day, season, product changes, and sale or promotion periods. This preparation requires integration with the business to ensure IT is ready for any and all business initiatives that will impact capacity. Perhaps you recall hearing about an organization that had a 20 percent-off sale day — only on the company's website — just seven working days before Christmas. The company advertised the sale widely, but failed to notify IT. On that day, the Web store "fell over" due to lack of capacity, causing damage to the company's reputation and significant loss of revenue (forecast to be the biggest revenue day of the year for that company). What's more, as a result, the company's share price fell 10 percent that same day.

Capacity Plan

ITIL recommends publishing an annual *capacity plan*. The contents of a capacity plan are described in the *Service Design* publication. The plan should incorporate business capacity management, service capacity management, and component capacity management.

- *Business capacity management* ensures that future business requirements for services are understood, and additional capacity is planned for and implemented.
- *Service capacity management* focuses on the management, control, and prediction of the end-to-end performance and capacity of IT services.
- *Component capacity management* covers the management, control, and prediction of the performance, utilization, and capacity of individual components.

A cloud computing strategy can help IT organizations deal with the fluctuation in demand for IT capacity.

Whenever possible, it's important to implement automated thresholds to manage components. This automation allows you to put actions in place to reduce the impact of situations that can occur when targets are breached or threatened. By continually monitoring and measuring the capacity of each system and component, you'll be immediately alerted when something happens to compromise capacity.

Activities can be *proactive*, such as taking necessary actions before they impact the business. For example, modeling can be done to help measure impact, budget for upgrades, and improve service performance. Activities can also be *reactive*, which may include monitoring, reporting, and reviewing performance; responding to threshold events; initiating corrective action; and responding to performance issues.

Capacity management should be included early in the process for strategic, design, and planning activities to support the development of service strategy, and to review and improve IT strategies, policies, and technology architectures. Capacity management should also play an active role in the support, negotiation, and verification of SLAs. For example, if you're negotiating a service for 2,000 remote users, you need to verify with capacity management what level of service can be delivered and whether all of the users plan to connect at the same time, 50 percent of the time, etc. You can then use this information to negotiate the SLA based on the business value to be delivered.

Effective capacity management requires knowledge of the business priority of services to determine whether a failure is business critical — such as when people can't place orders — or whether a failure just means that some employees can't access the printers nearest to them.

Some capacity upgrades may be required to ensure future capacity. These may be considered long-term activities, because either the cost is considered high or the consequences of not upgrading may not be seen as significant. With the right demand-management processes in place, you should be able to understand which services are using which resources. If the IT organization charges for services, consider offering financial incentives, such as lower fees for work done at times when there is less demand.

Services might be impacted by physical constraints that make some services unavailable at certain times. For example, when people make a phone call during a crisis, such as a hurricane, they may get a busy signal because the phone service is unavailable. Services can also be impacted by financial constraints, such as deciding to not spend the money to provision more capacity because it isn't economically reasonable.

One of the objectives of capacity management is to predict the behavior of IT services. This involves asking "What if?" questions. Capacity management and modeling techniques can help answer these questions, such as: "What will happen if a service is moved from one server to the next?"

How will you know if your capacity management process is successful? You should be able to obtain accurate forecasts that will help adjust your capacity plan to meet desired business objectives. Capacity management can improve costs by reducing over-capacity and disruptions that impact your customers.

The appropriate level of availability should be incorporated into the service design strategy from the beginning to ensure that availability targets are measured and achieved.

Information Management

The CMIS provides relevant capacity and performance information to support the capacity management process. Consider obtaining the following types of reports:

- *Component-based reports* show how components are performing and the amount of capacity used.
- *Service-based reports* show how the service and constituent components perform against their service targets.
- *Exception-based reports* indicate when capacity and component performance are unacceptable.
- *Predictive and forecast reports* help ensure continuity in service levels.

Availability Management

Availability management helps to ensure that the level of availability for all services meets or exceeds existing and future business needs. To make this happen, you must understand business processes, future plans and requirements, service targets, and IT infrastructure data, as well as business impact. The appropriate level of availability should be incorporated into the service design strategy from the beginning to ensure that availability targets are measured and achieved.

While availability can generate reactive processes, the key is to make availability objectives more proactive to predict, preempt, and prevent downtime through the effective automation and integration of processes and technology. Availability is often measured as a percentage, as described in the *Service Design* publication.

ITIL refers to *vital business function* (VBF) as business-critical elements of business processes that are supported by IT services. The *Service Design* publication uses the example of an ATM, where getting cash may be vital, but having a printed receipt may not. Designs for VBFs should incorporate:

- High availability
- Fault tolerance
- Continuous operation
- Continuous availability, with a goal toward 100 percent

Availability management processes include determining availability requirements from the business for new or enhanced services, identifying VBFs, determining the impact of a component failure, and designing processes

to minimize this failure. This encompasses setting targets for the availability, reliability, and maintainability of components so that IT can measure and meet SLAs, OLAs, and contracts. This also entails measuring, monitoring, reviewing, and investigating areas that impact availability, along with producing and maintaining an availability plan.

Traditional measurements of availability include a review of the percentage of time available, the percentage of time unavailable, and the duration of downtime in minutes. Measurements also look at the frequency and impact of failure.

Availability management processes must carefully take into account availability from both a business and IT perspective. The users are concerned with frequency of downtime, the duration, and the scope of the impact. To measure this, be sure to look at the user minutes lost and the impact by transaction.

Focus measurements on how the availability of vital business functions impacts the business. Availability should be agreed to by the business and should identify the following:

- The minimum available level of functionality for the service
- The level at which service response is considered unavailable
- Where to measure functionality and response
- How much weight should be given to partial service unavailability
- What happens to the availability of the whole service if one location is impacted

Availability management processes must carefully take into account availability from both a business and IT perspective.

The cost of an IT failure could be shown as the number of business or IT transactions impacted, as well as the monetary loss. This information can provide insight into the consequences of failure. The cost to the business can be determined by combining tangible costs — lost productivity, lost revenue, wasted goods, etc. — with intangible ones, such as damage to reputation, loss of business opportunity, erosion of profits, and so on.

Service failure analysis (SFA) provides a structured approach to determine the cause of service interruptions. This approach covers the following phases: select the opportunity, scope the assignment, plan the assignment, build a hypothesis, analyze the data, interview key personnel, assemble the findings and conclusions, incorporate the recommendations, produce a report, and provide validation. This approach is covered in detail in the *Service Design* publication. Recommendations should be formulated by the SFA team.

Be Proactive

A variety of activities can help your organization take a more proactive approach to availability management. First, identify the VBFs. Then focus on designing a service for availability based on the level of service required, affordability, and what is cost-justifiable to the business. Look at the base product and components to make sure they are capable of meeting your availability and reliability requirements.

Systems should monitor, diagnose, and offer automated error recovery. Solutions should be able to incorporate full mirroring or redundancy to help meet requirements for components and their environments, such as the data center and air conditioning.

Business requirements for IT availability should be included in the VBFs supported by the service, define the service downtime, include the business impact of service loss, and incorporate quantitative availability requirements, such as what the business will tolerate. This should include the required service hours, security requirements, and backup and recovery capabilities, and should estimate the cost per minute to help prioritize impact.

A variety of activities can help your organization take a more proactive approach to availability management.

Component failure impact analysis (CFIA) is "a technique that helps to identify the impact of CI failure on IT services. A matrix is created with IT services on one edge and CIs on the other. This enables the identification of critical CIs (that could cause the failure of multiple IT services) and of fragile IT services (that have multiple single points of failure)."[6] This approach can be used to identify measures for preventing or minimizing how a component failure impacts the business. For example, the CFIA can indicate component recovery timings and component- and people-related dependencies.

Other types of analysis include locating a single point of failure and its impact, along with a *fault tree analysis* (FTA) to determine how a chain of events can disrupt services. By conducting an FTA, you can distinguish the following types of events: *basic events* (power failure, operator error, etc.), *resulting events* that occur from a combination of events, *conditional events*, and *triggers*. A conditional event occurs only when certain conditions happen, such as when the air conditioning goes down. Trigger events can happen when detection equipment identifies an automatic shutdown of services.

It's essential to manage maintenance effectively to ensure availability. After you've defined the maintenance requirements, document them in SLAs, OLAs, contracts, change management schedules, and release and deployment management schedules. Most businesses want their services 100 percent available during business hours. However, at night or on weekends, the requirements might be less critical, and scheduled changes can occur with minimal risk.

6 Ibid. See *Component Failure Impact Analysis*.

Availability Management Effectiveness

KPIs are often used to measure availability management effectiveness. Factors to consider include:

- Managing the availability and reliability of IT services, such as the percentage of reductions in unavailability of services and components, number and impact of service breaks, and mean time to restore service
- Satisfying business needs by providing access to IT services, such as the percentage of reductions in critical time failures, cost of business overtime due to unavailable IT, and unavailability of services
- Making sure that IT infrastructure meets availability requirements at optimum costs, reduced time to review system resilience, and reduced time to complete an availability plan

This section provides a detailed list of availability management measurements to consider, such as the percentage of improvement in overall service availability, the percentage of reduction in the number of service breaches and their impact, the percentage of reduction in the cost of unavailability, and so on.

IT Service Continuity Management

IT service continuity management (ITSCM) focuses on supporting overall business continuity management. ITSCM is defined as "the process responsible for managing risks that could seriously impact IT services. ITSCM ensures that the IT service provider can always provide minimum agreed service levels, by reducing the risk to an acceptable level and planning for the recovery of IT services. ITSCM should be designed to support Business Continuity Management."[7] This chapter discusses the importance of IT service continuity plans and recovery plans, and it discusses the importance of following a lifecycle approach.

The ITSCM lifecycle process is divided into four stages: *initiation, requirements and strategy, implementation,* and *ongoing operation* (see Figure 3). The *initiation* stage begins with setting policy, where members of the organization affected by or involved with business continuity issues learn about their responsibilities related to ITSCM. The next step entails specifying the terms of reference and the scope of responsibilities. This step involves performing a risk analysis and business impact analysis, as well as determining the control structure for supporting services during interruptions in business. After that comes allocating resources to provide training that will familiarize staff with what's needed to accomplish tasks during this stage — or to bring in consultants to help expedite the project. The process continues with designing the project organization and control structure, followed by getting buy-in from necessary parties on the project requirements and quality plans.

The second stage, *requirements and strategy*, involves performing a business impact analysis to identify the form of the potential damage or loss. This could be in terms of lost income, extra costs, damaged reputation, loss of competitive advantage, and so on. Once this analysis is completed, it is possible to identify the business impact caused by the unavailability of a service over time. This type of assessment facilitates the mapping of critical service, application, and technology components to business processes.

7 Ibid. See *IT Service Continuity Management.*

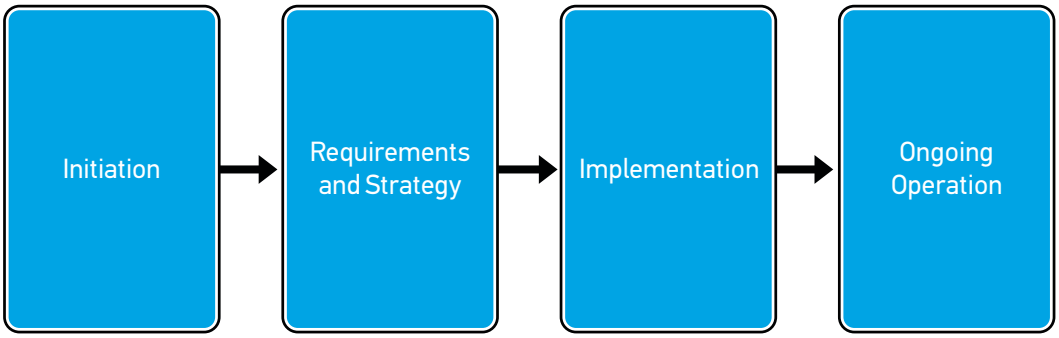

Figure 3. Four Stages of the ITSCM Lifecycle Process

Mapping business processes to business services allows you to further link the business processes to the underlying infrastructure. This is done by tying business process data to the service catalogs in the CMS. Advanced discovery tools can seek out information from business process mapping tools and maintain it in the CMS. This information can bridge the communications gap that often divides IT and business owners. The knowledge obtained can help with decision support for ITSCM.

The *implementation* stage includes developing plans to decide which critical resources should be reinstated within an acceptable time frame. The plan should document all details pertaining to the recovery of IT services following a disaster. You will need a checklist that contains specific actions required during recovery stages. These actions include restoring a system to an operational state, conducting connectivity checks, and performing checks for functionality, data consistency, and integrity.

Mapping business processes to business services allows you to further link the business processes to the underlying infrastructure.

A number of plans need to be integrated with the company's overall business continuity plan. This task includes integrating plans for emergency response, damage assessment, salvage, vital records, crisis management and PR, security, personnel, communication, and finance and administration.

Disasters Happen — How to Minimize Their Impact

Risk analysis can help you prepare for almost any type of disaster that may cause a loss of critical systems, data, and services.

Risks can include threats from fire, power failures, hurricanes, and other problems. Also note that threats may come from other areas that you might not anticipate. For example, data corruption in a Canadian bank caused customer banking activities to be unavailable for five working days.

Consider a variety of factors to help mitigate risk, such as providing off-site storage, developing ITSCM recovery options, or performing manual workarounds. For example, for certain services, such as those provided by the service desk personnel, you may need to work from spreadsheets as a workaround until service is restored.

Testing is a requirement. If you don't test recovery plans, they may not work when you need them. Examples of tests include walk-through tests, full tests, partial tests of certain elements, and scenario tests for assessing reactions to specific situations.

The final stage, *ongoing operation*, covers education and training to ensure that the IT staff is aware of business continuity activities. It includes a periodic review of the deliverables to ensure they are kept current. This stage involves regular testing to verify that critical components are functioning properly and that the backup and recovery of IT services are being monitored. Finally, this stage incorporates change management to ensure that changes are assessed to see how they might impact ITSCM plans and, if the changes are implemented, to ensure that the ITSCM plans are updated.

Perform regular reviews, at least annually, of the business and IT continuity plans.

Meeting Business Objectives with ITSCM

How do you know that ITSCM plans are meeting objectives? Regularly audit plans to ensure that the recovery requirements of the business can be achieved. Perform regular reviews, at least annually, of the business and IT continuity plans. Examine the reduction in risk and the impact of a possible failure of IT services.

Information Security Management

The *information security management* (ISM) process focuses on aligning IT security with business security to effectively manage information security. *Information security* is an activity that happens as part of corporate governance. The guidance in the *Service Design* publication can help IT organizations to manage information security risks and use enterprise resources responsibly.

Information security is used to protect data stores, databases, and metadata. It protects the interests of people who rely on this information, and it protects the systems that deliver the data.

This section reviews what should be included in the ISM process, such as the implementation and documentation of security controls, and the management of suppliers and contracts regarding access, breaches, and other significant details. (See the *Service Design* publication for more information about ISM processes.)

Summary

Requirements engineering is a focus area for ITIL. One of the most significant points in this chapter is the importance of building a requirements catalog, where requirements are collected and documented. The chapter includes a sample requirements template to help you analyze whether an activity provides a real business benefit, and enables you to compare requirements. You must be able to justify and prioritize your requirements when designing your services.

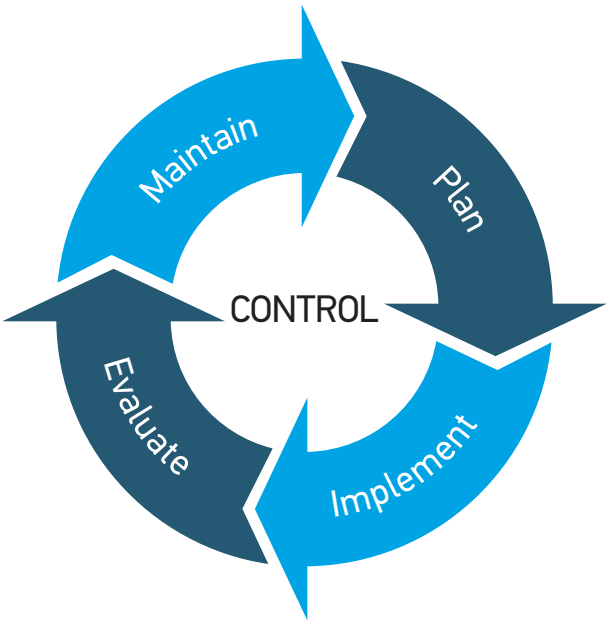

Figure 4. Framework for Managing IT Security

One of the most important elements of ISM is to have a policy that covers all areas of security, including email, access control, use and misuse of assets, use of the Internet, installation of anti-virus software, and asset disposal, to name a few.

A framework for managing IT security is detailed in the *Service Design* publication. It emphasizes five main areas of focus: *control, plan, implement, evaluate,* and *maintain*, as shown in Figure 4.

Security controls are imperative for supporting and enforcing the information security policy. The types of controls used depend upon the potential for damage. Security measures can be *preventive*, such as giving access rights only to specific groups. They can be *reductive* to minimize potential damage, such as making backups of material or testing contingency plans. They can be *detective*, such as monitoring that is linked to alerts. Or, they can be *repressive* to counteract the repetition of an incident, such as blocking an account after several failed attempts to log on. Measures can also be *corrective*, as in restoring the backup.

ISM is particularly vital because of the growing threat related to identity theft, along with other security issues, such as viruses and data loss. People should be given access only to the information they need, and only for as long as they need it; for example, when an employee leaves a company, the person's login should be disabled

immediately. If you enforce security management through logins and profiles, as recommended by ITIL, access becomes more manageable so that only the people who are entitled to access information get clearance. IT organizations can save time and work more efficiently by automating as many activities as possible related to user access. With preventive, reductive, detective, repressive, and corrective security management processes in place, you can control who has authorization to access data and can prevent security breaches.

Supplier Management

By following the ITIL guidelines related to supplier management processes and putting a supplier network in place, you will get more value for your investment. This section outlines the elements of a supplier management process, which should cover details such as those related to supplier contract evaluation and selection, as well as contract review, renewal, and termination. Documented processes should be available to evaluate suppliers based on their importance to the business, risks associated with the service, and the cost of service.

IT organizations can save time and work more efficiently by automating as many activities as possible related to user access.

What should you include in a basic contract or service agreement with a supplier? These documents should contain information on basic terms and conditions (the duration of the contract, locations, etc.); service description and scope (service functionality); service standards (performance requirements for availability); workload ranges and management information (KPIs); and responsibilities and dependencies.

The effort you spend working with suppliers depends upon both your strategy and their role as partners. *Strategic partners*, for example, are involved in the most high-value relationships. They often work closely with senior management and share confidential strategic information to help support long-term plans. *Tactical partners* are involved in relationships that are usually overseen by management and are involved in significant business activities. *Operational partners*, which may be responsible for Internet hosting, have a key, but lesser role, and are often managed by more junior level personnel. Finally, *commodity suppliers* provide products or services, such as copy machine or printer maintenance, and may be managed by administrative assistants.

Here's what can happen without an effective supplier management strategy. Assume you receive a confirmation for a laptop and it contains one serial number. When you open the box, however, the serial number is different from the confirmation. Something goes wrong with the laptop, and you call the support team. Instead of getting the free support you think you're entitled to, you'll likely be told that you must pay for support, because you're not listed as owning that particular laptop. With a good supplier management strategy, this problem could be prevented or, if it is not caught initially, at least it could be addressed with the supplier to devise a way to ensure it never happens again.

Be sure to have a clearly defined strategy for negotiating with vendors. You can negotiate more favorably by consolidating vendors. This will enable you to benefit from the advantages of scale, which can result in significant savings.

Summary

By following the guidance discussed in this chapter of the *Service Design* publication, your organization will be able to more effectively meet business priorities, while also reducing costs and risk through a results-driven approach. These processes support the automation of critical functions and reduce errors. You may already follow many of these processes. Applying the ITIL best practices to your current processes can help you increase business value. This chapter expands on these processes and introduces processes for design coordination, service catalog management, information security management, and supplier management. It covers a broad review of the five aspects of design, including the design of services, service management systems and tools, technology architectures and management systems, processes, and measurement methods and metrics.

Chapter 5
Service Design — Technology-Related Activities

This chapter reviews requirements engineering, which entails first figuring out *what* the business needs, and *then* building the requirements. The main point is to get your business customers to explain why they need a certain capability, and then decide the best way to implement this to define the "how."

Suppose your internal customers want the ability to remotely view an application, such as Outlook, via the Web. To make this service possible, you need to look at how offering Webmail will impact the infrastructure and service levels, and how the service levels are monitored. If you haven't already designed a Web interface for this application, you will need a new interface. The customer can explain why Webmail is needed, but probably isn't in the best position to describe what the interface for Webmail should look like. Before offering this type of service, if you understand the meaning behind the customer's requirements, you may come up with a completely different and more valuable solution, thus adding value to the business.

There are three types of requirements: *functional, management and operational,* and *usability. Functional requirements* describe what a service should do and include the tasks or functions to be performed to support a specific function. *Management and operational requirements* identify constraints on the service

that users must adhere to. For example, such constraints might include how reliable the service must be, the level of efficiency, and maintainability. *Usability requirements* define how the service is used. Remember to establish performance standards and define scenarios for usability test plans and testing to ensure that the user requirements are being met.

This chapter offers guidelines for interviewing users, conducting workshops, performing a scenario analysis, observing activities, and developing prototypes for requirements engineering. Three types of participants should be involved in the requirements process: the business, the user community, and the service development team.

Remember to establish performance standards and define scenarios for usability test plans and testing to ensure that the user requirements are being met.

You will want to spend sufficient time up front to fully understand requirements. More than 80 percent of errors are introduced at this stage, when tight deadlines sometimes result in incomplete or faulty requirements. The service that is delivered may not cover the service that was actually requested. And, according to ITIL, less than 10 percent of the errors happen during the design and development stage.

The following checklist provides guidance for identifying whether a requirement is well formed:

- Are the requirements clear?
- Is the meaning easy to understand?
- Does the requirement support the specific business objectives of the service?
- Is the requirement reasonable?
- Do any requirements conflict with one another?
- Do they imply a solution instead of stating a requirement? (They should state the requirement.)
- Are they listed as individual requirements, or are they grouped together in a single entry?
- Do several requirements duplicate each other?

Data Management

This section discusses the reasons you should take a lifecycle approach to the process of data management. It also addresses issues on how data is held and classified, collected, stored, maintained, owned, and accessed. Data must be carefully managed to support IT services. Users should have access to the information and applications they need to do their jobs. Data quality must be at an acceptable level. Security and privacy should be enforced when users access certain systems and request information. For example, access to information on medical records is governed by strict privacy guidelines. Poor data management can lead to business risks and added costs. IT providers must be very cautious in managing data. The data-to-information-to-knowledge-to-wisdom (DIKW)

model outlines how data gets transformed into information, information into knowledge, and knowledge helps people make decisions for various stakeholders. If data does not help with decision making, what value does it have? The management of data for the sake of managing data compromises the IT organization's efficiency and effectiveness to achieve business outcomes. Be sure that IT decisions for the management of data support business-valued outcomes.

Application Management

This section reviews the value of an application portfolio and what this portfolio should contain. The portfolio should provide close relationships and links between applications, services, and infrastructure components. ITIL also offers guidance on designing applications, including providing a flexible design so that changes can be made easily as services are enhanced. This involves keeping the following factors in mind when designing applications:

- What are the management and operational requirements?
- How will trade-offs be managed?
- Where can application-independent guidelines be incorporated?
- What should be included in the design process checklist?

Most of the time spent in application development projects is focused on designing and developing generic functions. Quite often, too little time is spent on meeting the management and operational requirements. ITIL offers recommendations on coding conventions, templates and code generation, details about the major service outputs from development, and other suggestions to facilitate improved application management.

Application management solutions can put you in total control of your application environments, regardless of platform or application, enabling you to avoid business outages that result from application failures or performance problems.

Application management solutions can put you in total control of your application environments, regardless of platform or application, enabling you to avoid business outages that result from application failures or performance problems. They can help increase customer satisfaction in a variety of areas, such as improved performance and availability of the application environment, and in recovering quickly from outages and minimizing downtime. They can help you meet SLAs by incorporating service level measurement and reporting to detect and resolve problems before they affect the end user.

These solutions should be able to increase efficiency by providing a single point of control with a common look and feel to manage across disparate platforms and by reducing the skill level required to maintain applications. In addition, they should reduce business costs by ensuring higher optimal automation levels for managing business-critical processes and through supporting the business demand on resources.

Summary

Requirements engineering is a focus area for ITIL V3. One of the most significant points in this chapter is the importance of building a requirements catalog, where requirements are collected and documented. The chapter includes a sample requirements template to help you analyze whether an activity provides a real business benefit, and enables you to compare requirements. You must be able to justify and prioritize your requirements when designing your services.

Chapter 6
Organizing for Service Design

A number of roles are needed to support service design. The *Service Design* publication gives examples of many roles, but the roles listed are not all the roles present in the industry. The RACI model (responsible, accountable, consulted, and informed) describes the roles listed in the publication.

The biggest value of the RACI model is that it clearly describes the roles that people should play in service design. It identifies who is accountable for particular areas, who needs to be informed of activities, and who should take specific actions. This comprehensive list of roles and responsibilities helps eliminate confusion and ambiguity. When people fully understand their roles, collaboration improves and there will likely be fewer bottlenecks to delay decision making. The model provides an activity analysis to help identify whether more than one role is accountable for an activity, or whether too many people are involved. It's appropriate to share responsibilities as long as the roles are clearly defined.

Steps for building the model include identifying activities and processes, defining roles, conducting meetings, identifying gaps, distributing information and integrating feedback, and making sure that the allocations are followed.

The chapter reviews the skills and attributes needed for certain roles, which include management skills, meeting skills, communications, articulation, negotiation, and analytical abilities. The chapter provides an overview of responsibilities for people in the following roles:

- Generic service owner
- Generic process owner
- Generic process manager
- Generic process practitioner
- Design coordinator
- Business relationship manager
- Service design manager
- IT planner
- IT designer architect
- Service catalog manager
- Service level manager
- Availability manager
- Continuity manager
- Capacity manager
- Security manager
- Supplier manager

Summary

This chapter provides excellent guidance to help organizations work more efficiently and effectively. The guidelines outlined in this section should reduce ambiguity so that people have a very clear understanding of their roles and responsibilities and the skills required to perform certain functions. Using this information to understand the scope of various roles can help IT organizations to determine whether they have any gaps or roles that are not covered, and to identify ways to fill these gaps. Please refer to the Skills Framework for the Information Age (SFIA), which is a common reference model for the identification of skills needed for IT services.

Chapter 7
Technology Considerations

This chapter focuses on how tools can increase efficiency by centralizing, integrating, and automating key processes. By using tools effectively, organizations can improve productivity, reduce costs, and provide better service. This chapter also identifies what you should look for when purchasing software solutions, such as how well they integrate with multi-vendor components; their flexibility in implementation, usability, and support; and their ability to support access rights and scalability. The chapter recommends following the 80/20 rule for tool selection: It's very difficult to find a solution that will meet 100 percent of most requirements, so opt for one that meets about 80 percent — but make sure that the "must-haves" are included in that 80 percent.

Over the years, most organizations learn a costly lesson if they define their processes first. They then discover that no tool can automate their processes out of the box, that the cost to modify is high, and that modification causes further issues with upgrades and integrations. Now, software vendors have created integrated suites of solutions that are ITIL compatible. The new model is to use these ITIL-compatible solutions to meet 80 percent of your requirements, then to customize the remaining 20 percent to meet your unique needs. This approach keeps the project cost down, the selection process short, and the deployment time reduced, with fast ROI.

Another example is if you are implementing change management from ITIL, you may find that the stakeholders and users are reluctant to use the new processes. To gain buy-in for the adoption from the organization at large, enlist support from senior management. Having the best change process documented and automated is useless if the people who should use it are unwilling to do so. Because change management is so critical, if all users don't follow the established process, there will be an adverse impact on the services and, therefore, on the business.

To gain buy-in for the adoption of the new processes from the organization at large, enlist support from senior management.

This section covers a long list of challenges to consider when designing services. Some common challenges to effective service design include integrating diverse, disparate applications and resources; dealing with unclear or changing requirements; and addressing cost and budget limitations. The situation is further complicated by the constraints of old technology and legacy systems.

Additional challenges include unreasonable targets and timescales that have been previously agreed upon, and poor supplier management. This list of challenges goes on and on. If you become aware of the challenges, you can identify objections and build a case for dealing with them. For example, if people have unreasonable expectations of SLAs, you can educate your internal customers on which SLAs are realistic. Or, if improving the SLAs is important to the business, you may need to modify processes and invest in technologies to improve these agreements.

The section also includes a detailed list of risks to identify before they lead to problems. A few primary risks include:

- Business requirements may not be clear to IT staff, which could lead to decreased availability of critical services during an upgrade or change.
- Insufficient time is given to the design stage, which could lead to services that do not meet their objectives because they have been insufficiently planned.
- Insufficient testing can lead to a poor design, which results in a poor implementation. For example, if a new expense report application is rolled out before being tested properly, employees may discover that they can't log on to the system to submit their expense reports. Or, even worse, if the design of an order-entry website is not fully tested, it may take too long for customers to complete transactions, and they could become frustrated and leave the site, resulting in lost business.

Critical Success Factors and Key Performance Indicators

Critical success factors (CSF) are used to identify key elements of success. The CSFs should be agreed upon when services and processes are being designed. An example of a CSF might be that applications are rolled out to all locations worldwide, as planned, instead of to just a few regions.

It also ensures a standardized process and silo elimination, something many organizations are in the process of fulfilling. Buy ITIL-compatible solutions, adapt, and adopt to quickly achieve and improve ROI.

Tools not only should *support* processes, but, ideally, they should go one step further and also *enforce* them. For example, a process can require that the status of an incident be set to "Resolved" when an incident has been closed. Processes should be defined down to the work-instruction level. *Work instructions* include very detailed information that specifies which steps are needed to complete an activity. These instructions contain more detail than typical procedures. By defining processes down to this level, you can ensure that the staff has clear instructions on how to complete a particular procedure using the appropriate service management application.

This chapter reviews how tools and techniques assist with the design of services and components. For example, it explains how designs can be simplified by tools that offer graphical views of a service and components. It also explains how such capabilities can be provided by some configuration management tools — which ITIL refers to as a key component of the Business Service Management (BSM) approach. The chapter describes how tools can contain, or can be linked to, auto-discovery solutions that show how relationships between various elements are graphically represented. This provides the ability to drill down within components to obtain more detailed information.

For example, a CMS containing the CMDB allows you to define services. Start by identifying what part of the service design process is used to design the architecture. Then model the service where information gets sourced in the CMDB. The CMDB allows you to identify configuration items that will be part of the service and how the configuration items relate to each other.

Tools not only should support processes, but, ideally, they should go one step further and also enforce them.

Solutions should facilitate design processes, and they should support and assist in all stages in the service lifecycle. For example, these tools should be used to manage stages of the service lifecycle, as well as aspects of the service and how it performs. They should support service achievement, including meeting SLAs and OLAs. In addition, they should offer consolidated metrics with views from management dashboards. (For more information about how these tools can be used in the service lifecycle, see the *Service Design* publication.)

Evaluating Service Management Tools

This section reviews important considerations for evaluating service management tools. It provides a variety of factors to consider, such as:

- How the tools conform to open standards
- How data is structured, handled, and integrated
- How multi-vendor infrastructure components are integrated
- Whether the tool offers flexibility in implementation, data sharing, and usage
- How easy the tool is to use
- How the tool provides support for monitoring service levels

Think about how you intend to use the tools and determine priorities. Indicate whether the tools are something you must have, should have, could have if it does not affect anything else — or won't have now, but would like to have in the future. The diagram in Figure 5 reviews the main steps in the process for evaluating the appropriateness of a tool for your organization's needs.

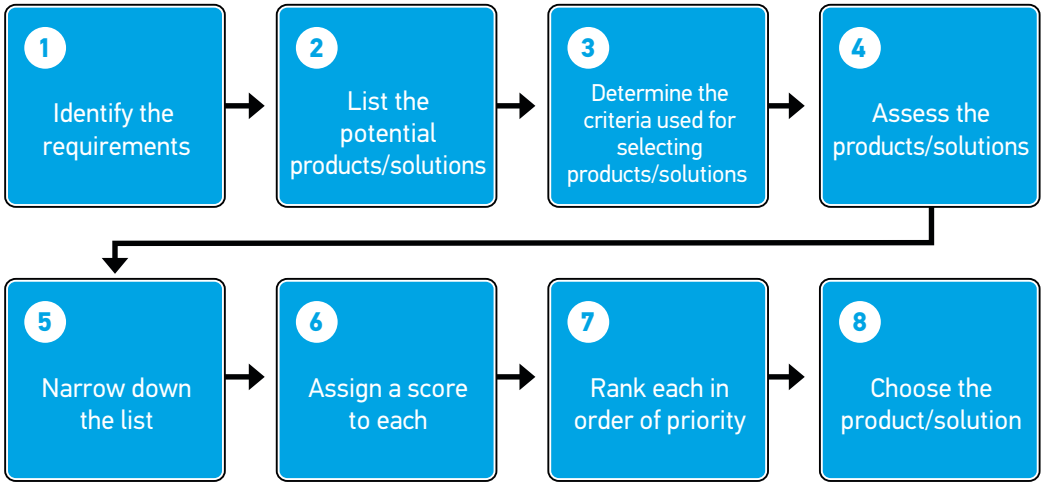

Figure 5. Service Management Tool Evaluation Process

Software can deliver the processes described in ITIL. The software should be flexible enough for you to decide how much customization you want, assuming that you even want to customize. Since most likely you are not starting from scratch, you will also need to evaluate what the out-of-the-box solution will deliver in regard to integration and automation above and beyond what you already have today. Then, balance this against the cost and effort of implementation and transition to the new software.

Summary

Remember, as long as you can achieve the same desired results, it may be easier to modify your processes to fit the best-practice processes *within the tool*, rather than to modify the tool to fit your processes.

BSM solutions implement many of the ITIL processes right out of the box as on-premise or off-premise cloud or Software as a Service (SaaS) solutions. By addressing vital process, technology, and people components of ITIL, they give you a substantial head start on ITIL implementations. They can shorten implementation cycles and eliminate excessive process design and documentation efforts. As a result, you can accelerate your progress toward ITIL adoption while driving down IT costs, increasing IT efficiency, and advancing business goals.

Chapter 8
Implementing Service Design

This chapter begins with a good question about service design: Where do you start? While ITIL recommends starting with a *business impact analysis* (BIA), some organizations may decide to start by resolving a pressing issue for a particular service or by solving an initial business pain with a visionary goal for transforming the business.

For example, if it takes customers ten minutes to submit an order during a peak business period, it might be a good idea to address the order-entry service first by evaluating the service design and making improvements. Proceed with one service at a time, with the intent to follow consistent service design processes for all of your services as you move forward.

The BIA is essential to the business continuity process and sets the approach you'll use for risk reduction and disaster recovery. This analysis will show you the impact a disaster could have on the business, and which parts of your organization will be impacted most. The analysis will explore manual workarounds in the event of a disaster — and their costs. It will also break down the impact of service loss and show how this could

disrupt business. The knowledge gained from a BIA will help organizations determine a business continuity strategy and provide more information about service functions and importance. For example, it could identify critical business periods so that you can avoid disruptions during those times, and identify acceptable levels and times of service outages.

Executing on the Service Design Vision

ITIL recommends that you follow a six-stage approach to execute on your service design vision. This approach includes identifying the vision and determining where you are, where you want to be, how to get there, how to tell whether you got there, and how to keep going. This chapter outlines steps to help assess whether you've met the objectives at each of the stages.

ITIL recommends that you follow a six-stage approach to execute on your service design vision.

The first stage, "what is the vision," involves a variety of activities, such as making sure that the IT vision is aligned with the business vision; establishing the scope of the project; setting high-level objectives; and establishing governance, sponsorship, and budget guidance.

In the "where are we now" or as-is stage, some ways to assess your current situation include conducting an internal review or audit; conducting an IEC/ISO 20000 assessment; performing a strengths, weaknesses, opportunities, and threats (SWOT) analysis; conducting an audit against COBIT; benchmarking your organization; or performing a maturity assessment. Such assessments help establish initial metrics for improvement.

To identify if you are at the "where do we want to be" or to-be stage, define a future state that is expressed in terms of planned outcomes. Examples of planned outcomes should identify increases in customer satisfaction, improvements in process performance, improvements to service levels, and so on.

The fourth stage, "how do we get there," includes identifying improvements to move from the current state to the future one. This activity involves developing a plan to implement these improvements. Pay close attention to guidelines in the *Service Transition* and *Service Operation* publications. Examples of some things to identify include improvement actions, risk assessment and management, resources and budgets, and roles and responsibilities.

The next stage, "how can we tell whether we got there," stresses the importance of designing measurements before you do the implementation. Express the desired state in terms that can be measured, such as a percentage increase in customer satisfaction, or a percentage reduction in service design non-conformances. Reviews can help determine whether you have achieved the new, desired state; identify lessons learned; and identify other improvement actions.

The final stage, "how do we keep going," focuses on establishing an environment for continual improvement. Some of the areas covered in this stage include developing a learning environment and maintaining the momentum on quality improvement.

Measure, Measure, Measure

This section reviews the importance of maintaining a balanced scorecard, which is discussed earlier in the *Service Design* publication. The scorecard offers a view of business performance and provides information to keep people focused on metrics that are significant to the business.

Prerequisites for Success

Success of service management projects depends on having clear goals and objectives in the service design stage. When establishing the goals and objectives in this phase, be sure to include critical success factors and key performance indicators to measure value realization. Efficient and effective usage of organizational assets — capabilities and resources including people, processes, procedures, technology, and associated metrics — is important for long-term success. BSM automation can help maximize your organizational assets to support the business vision. Overall, BSM automation can manage, measure, and monitor critical tasks to ensure business service value realization.

Summary

Implementing service design is a continual process. The six stages reviewed in this chapter, along with the seven-step improvement model (described in the *Continual Service Improvement* publication), will help organizations reach their objectives. While some organizations should consider doing a BIA to decide where to begin, others may want to begin by trying to address the services with the greatest pain. Still others, if they don't have a full understanding of the services they provide to the business — let alone a service catalog to review — may want to start by defining the services they offer. Don't try to do everything in service design all at once. Rather, take an iterative approach. Manage your projects wisely and set goals that are SMART (specific, measurable, attainable, relevant, time-based).

Chapter 9
Challenges, Risks, and Critical Success Factors

Read this chapter closely. Even though it's only two pages, the information it provides regarding challenges and risks will influence your success when introducing new services.

Understand your business requirements and priorities so that you stay focused on what matters most to your company. Be sure to communicate effectively, both in explaining what is happening and how it impacts people, and in listening to needs and requirements.

The chapter advises that you get commitment from senior management in addition to other members of the staff. This commitment extends beyond simply getting approval to do a service design project. It includes getting buy-in, with a sponsor willing to resolve any conflicts that may arise later.

For example, the user community may not want to take the time to learn how to use a new sales force automation system. The sponsor can help your organization convey the value that this application brings to the company in terms of the ability to forecast and to increase revenue. This influence requires active involvement and commitment at the executive level.

Another example is if you are implementing change management from ITIL V3, you may find that the stakeholders and users are reluctant to use the new processes. To gain buy-in for the adoption from the organization at large, enlist support from senior management. Having the best change process documented and automated is useless if the people who should use it are unwilling to do so. Because change management is so critical, if all users don't follow the established process, there will be an adverse impact on the services and, therefore, on the business.

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Critical success factors (CSF) are used to identify key elements of success. The CSFs should be agreed upon when services and processes are being designed. An example of a CSF might be that applications are rolled out to all locations worldwide, as planned, instead of to just a few regions.

Key performance indicators (KPIs), which were reviewed earlier in this publication, are used to measure the achievement of each CSF. The KPI measurements quantify objectives and measure performance. Set and measure KPIs against the design and use KPIs to measure each process. An example of a KPI for process design includes the percentage of service design plans completed on time.

Summary

Recognize that there will be challenges and risks to effective service design, and address them proactively. Define measures of success that include quick wins. Achieving quick wins will help the organization see the value of a service design approach. If it takes two years to demonstrate success, your project could lose momentum and support; your project also might need re-evaluation before it's implemented, as the business need or requirements may have changed since its inception. The service may no longer be required, or a major modification may be necessary to address the current business objectives. Consequently, it's important to show results in three months, even if they are just incremental achievements. Some benefits will be short-term benefits, while others will take many months to achieve. Find the right mix.

Afterword

The ITIL *Service Design* publication provides guidance on how to create the appropriate business-aligned and innovative services, including the IT policies, architectures, and documents you will need. BSM is an approach that includes collaborative people, process, technology, and supplier components for managing IT services to help ensure that the goals of IT are integrated with those of the business.

To help you in your efforts, make sure to take advantage of the templates in the Appendix of the *Service Design* publication. They provide practical examples to help you get started with service design or to enhance your existing service design processes. In addition, pay close attention to the discussion of technology considerations to understand how to effectively automate and integrate ITIL best practices.

As mentioned earlier in this booklet, applying the principles of service design is like developing the blueprint for a house. By following ITIL guidance, you will create a better "house" by addressing customer (i.e., business) needs, coordinating and collaborating effectively, and complying with governance regulations. This approach will dramatically improve the value IT delivers to your business. And that is a business goal worth pursuing.

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