

# Quick Reference Guide

## ITIL® Service Design

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David and Roderick are passionate about helping organizations understand and document their own business processes, using frameworks such as APQC's Process Classification Framework and standards such as BPMN as well as applying simple approaches to improve and simplify these business processes.

### Abstract

This Quick Reference Guide provides a summary of the Service Design lifecycle for Information Technology Infrastructure Library, more commonly ITIL. The information contained is derived from the Axelos ITIL Foundation Handbook and supplemented from the ITIL Service Strategy Lifecycle publication. The document is based on ITIL 2011.



Figure 1: ITIL Service Strategy

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# Introducing ITIL Service Design

## Background

ITIL is the well-known set of practices for IT service management (ITSM) that focuses on aligning IT services with the needs of business.

Figure 1 provides a high level overview of the complete ITIL service lifecycle. This Quick Reference Guide is the 2nd in a series of Quick Reference Guides for ITIL and covers the Service Design lifecycle phase of ITIL.

## Overview

Businesses require that their services deliver fair and true

value. Consequently, it requires that these services must be designed to achieve these business objectives.

Service Design uses the strategies published by Service Strategy into a plan for delivering the business objectives.

ITIL Service Design provides:

- Guidance for the design and development of services and service management practices
- Design principles and methods for converting strategic objectives into portfolios of services and service assets.

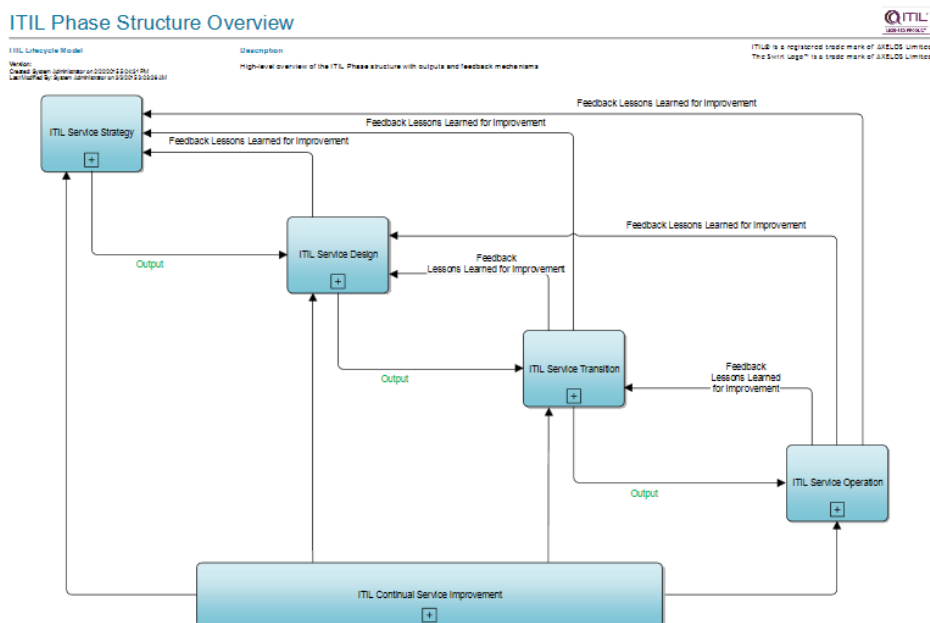


Figure 1: ITIL Service lifecycle

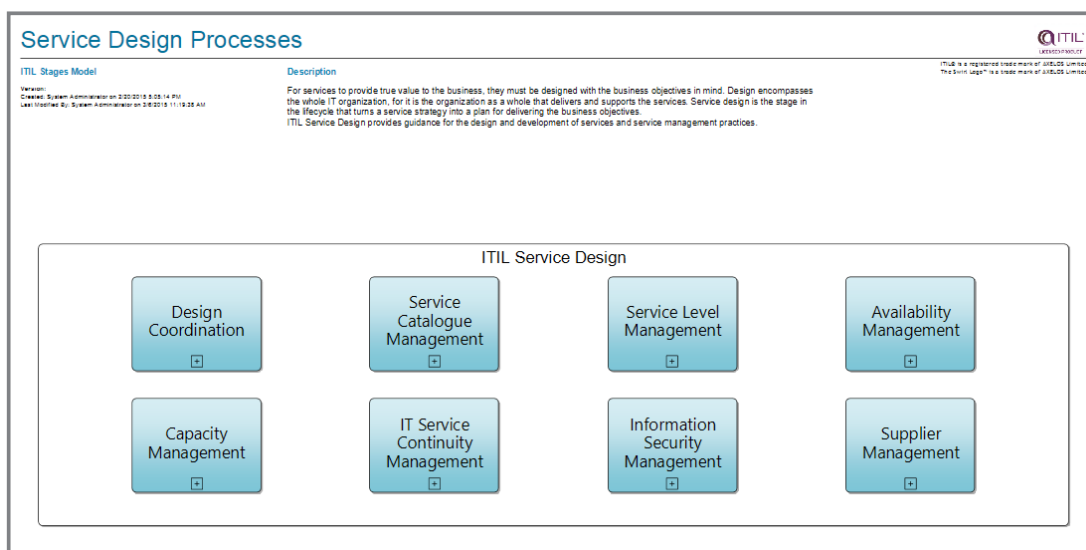


Figure 2: Service Design Overview

## Purpose and Objectives

The purpose of Service Design is to design IT services to realize the service provider's strategy and to facilitate the introduction of these services into supported environments ensuring quality service delivery, customer satisfaction and cost-effective service provision.

Service Design is undertaken in conjunction with the design of policies and processes to implement the services and the IT practices to govern them.

The objective is to design IT services so effectively so that minimal improvement should be required during their lifecycle. Although, it is important to embed continual improvement in all service design activities to:

- Ensure solutions and designs become more effective over time; and
- Identify business trends and changes that may offer opportunities for improvement.

Service design activities can be periodic or exception-based when they may be triggered by a specific business need or event.

## Service Design Processes

The processes contained within the Service Design lifecycle are:

- Design coordination
- Service catalogue management
- Service level management
- Availability management
- Capacity management
- IT service continuity management
- Information security management
- Supplier management.

## Design Coordination

### Overview

The activities of the service design stage are detailed and complex. Only through well-coordinated action can a service provider hope to create comprehensive and appropriate designs that will support the achievement of the required business outcomes.

### Purpose and Objectives

The purpose of design coordination is to ensure the goals and objectives of the design stage are met. It provides a single point of coordination and control for all activities and processes within this stage of the service lifecycle.

The objectives of the design coordination process are to:

- Ensure the consistent design of appropriate services, service management information systems, architectures, technology, processes, information and metrics to meet current and evolving business needs and requirements
- Plan and coordinate all design activities
- Produce SDPs based on service charters and change requests
- Ensure that appropriate service designs are produced and that they are handed over to service transition as agreed
- Manage the interfaces with service strategy and service transition
- Improve the efficiency and effectiveness of service design activities and processes.

### Process Activities

Design coordination activities fall into two categories:

- Activities relating to the overall service design lifecycle stage, which may be performed by design coordination process manager(s):
  - o Define and Maintain Policies and Methods
  - o Plan and Design Resources and Capabilities

- o Coordinate design activities
- o Manage Design Risks and Issues
- o Improvement Service Design
- Activities relating to each individual design, which may be performed by a project manager or other project team member:
  - o Plan Individual Designs
  - o Coordinate Individual Design
  - o Monitor individual Designs
  - o Review Designs and Ensure Handover of Service Design Package

## Triggers, Inputs and Outputs

### Triggers

- Changes in the business requirements and services
- Requests for change (RFCs)
- New programmes or projects
- Revision of the overall IT strategy.

### Inputs

- Service charters for new or changed services
- Change requests from any stage of the service lifecycle
- Business information from the organization's business and IT strategy and from business impact analysis (BIA).

### Outputs

- A comprehensive and consistent set of service designs and SDPs
- Revised enterprise architecture
- Revised management systems, processes, measurements and metrics methods.

# Service Catalogue Management

## Overview

The service catalogue is one of the most valuable elements of a comprehensive approach to service provision and it should be given proper care and attention. The service catalogue management process provides the means of devoting care and attention in a consistent fashion, ensuring that the organization accrues all of the potential benefits of a service catalogue in the most efficient manner possible.

## Purpose and Objective

The service catalogue is a single source of consistent information on all of the agreed services. The objective of service catalogue management is to manage the information contained within the service catalogue and to ensure that it is accurate and current.

## Process Activities

Key activities for service catalogue management are:

- Agree and document service definitions
- Interface with service portfolio management (service portfolio management) to agree the contents of the service portfolio and the service catalogue
- Produce and maintain the service catalogue
- Interface with the business and IT service continuity management (ITSCM) to understand the links between business processes and the IT services
- Interface with support teams and service asset and configuration management (SACM) to understand the relationships with supporting services, components and CIs
- Interface with business relationship management and SLM to ensure information is aligned to the business.

## Triggers, Inputs and Outputs

### Triggers

- Changes in the business requirements
- Changes in the services.

### Inputs

- Business information from the business and IT strategy
- BIA
- Business requirements
- RFCs.

### Outputs

- Updates to the service portfolio
- Updates to RFCs
- The service catalogue.

## Service Level Management

### Overview

Service Level Management (SLM) is a vital process for every IT service provider organization in that it is responsible for agreeing and documenting service level targets and responsibilities within SLAs and service level requirements (SLRs) for every service and related activity within IT. If these targets are appropriate and accurately reflect the requirements of the business, then the service delivered by the service providers will align with business requirements and meet the expectations of the customers and users in terms of service quality. If the targets are not aligned with business needs, then service provider activities and service levels will not be aligned with business expectations and problems will develop. The SLA is effectively a level of assurance or warranty with regard to the level of service quality delivered by the service provider for each of the services delivered to the business. The success of SLM is very dependent on the quality of the service portfolio and the service catalogue and their contents because they provide the necessary information on the services to be managed within the SLM process.

## Purpose and Objective

The purpose of the Service Level Management (SLM) process is to ensure that all current and planned IT services are delivered to agreed achievable targets.

The objectives of SLM are to:

- Define, document, agree, monitor, measure, report and review the level of IT services provided
- Improve the relationship and communication with the business and customers
- Ensure that specific and measurable targets are developed
- Monitor and improve customer satisfaction
- Ensure a clear and unambiguous expectation of the level of service to be delivered
- Ensure continual improvement to the levels of service, even when all agreed targets are met.

## Process Activities

The key activities for SLM are:

- Design SLA frameworks
- Determine, document and agree requirements for new services and produce SLRs
- Negotiate, document, agree, monitor and report on SLAs for operational services
- Conduct service reviews and instigate improvements within an overall SIP
- Collate, measure and improve customer satisfaction
- Review and revise SLAs, OLAs, service scope and underpinning agreements.

## Triggers, Inputs and Outputs

### Triggers

- Changes in the service portfolio
- New or changed SLRs, SLAs, OLAs or contracts
- Service breaches or threatened breaches

- Periodic activities – reviewing, reporting and customer satisfaction surveys
- Changes in strategy or policy.

### Inputs

- Business requirements
- Strategies, policies and constraints from service strategy
- The service portfolio and the service catalogue
- Customer and user feedback
- Improvement opportunities from the CSI register.

### Outputs

- Service reports
- Service improvement opportunities
- SIP
- SLRs, SLAs, and OLAs.

## Availability Management

### Overview

Availability is one of the most critical parts of the warranty of a service. If a service does not deliver the levels of availability required, then the business will not experience the value that has been promised. Without availability the utility of the service cannot be accessed. Availability management process activity extends across the service lifecycle.

### Purpose and Objective

Availability management ensures that the level of availability delivered in all IT services meets the agreed availability needs in a cost-effective and timely manner. It is concerned with meeting both the current and future availability needs of the business.

The objectives of availability management are to:

- Produce and maintain the availability plan, reflecting the current and future needs of the business, and to provide guidance to the business and IT on availability-related issues

- Ensure that availability achievements meet or exceed targets and, where they do not, assist with the diagnosis and resolution of related incidents and problems
- Assess all changes for their impact on the availability plan and proactively improve availability, where cost-justifiable to do so.

### Process Activities

The key activities for availability management are:

- Monitor, measure, Analyze, report and review service and component availability
- Unavailability analysis: investigating all events, incidents and problems involving unavailability and instigating remedial action
- Service failure analysis: identifying the underlying causes of service interruptions
- Identify VBFs and designing for availability and recovery
- Component failure impact analysis (CFIA), single point of failure (SPOF) and fault tree analysis (FTA)
- Model to determine whether new components will meet stated requirements.

### Triggers, Inputs and Outputs

#### Triggers

- New or changed business needs or services
- Service or component breaches, availability events or alerts
- Periodic activities such as reviewing, revising or reporting.

#### Inputs

- Business information from the organization's business strategy
- Business impact from BIAs or assessment of VBFs
- Service information from the service portfolio and the service catalogue



- Past performance from previous measurements, achievements and reports
- Change and release information from the change schedule, the release and assessment of all changes for impact on service availability
- Unavailability and failure information from incidents and problems.

## Outputs

- The AMIS
- The availability plan for the proactive improvement of IT services and technology
- Availability and recovery design criteria and proposed service targets
- Availability, maintainability and reliability reports.

# Capacity Management

## Overview

Capacity management is a process that extends across the service lifecycle. A key success factor in managing capacity is ensuring it is considered during the design stage. It is for this reason that the capacity management process is included here. Capacity management is supported initially in service strategy where the decisions and analysis of business requirements and customer outcomes influence the development of patterns of business activity, lines of service (LOS) and service options. This provides the predictive and ongoing capacity indicators needed to align capacity to demand. Capacity management provides a point of focus and management for all capacity- and performance-related issues, relating to both services and resources.

Like availability, capacity is an important part of the warranty of a service. If a service does not deliver the levels of capacity and performance required, then the business will not experience the value that has been promised. Without capacity and performance the utility of the service cannot be accessed.

## Purpose and Objective

The purpose of capacity management is to ensure that the capacity of IT services and the IT infrastructure meets the agreed capacity and performance-related requirements in a cost-effective and timely manner.

The objectives of capacity management are:

- Produce and maintain an accurate capacity plan, and provide advice and guidance on all capacity and performance-related issues
- Ensure service performance achievements meet their agreed targets, and assist with diagnosis and resolution of incidents and problems
- Assess the impact of all changes on the capacity plan and proactively improve performance, where cost-effective.

## Process Activities

The main activities involved in the capacity management process are carried out in both a reactive and a proactive way. Generally, the more emphasis that is placed on proactive capacity management, the less effort that is required in reacting to incidents and problems due to capacity or performance-related issues.

The proactive activities of capacity management should include:

- Pre-empting performance issues by taking the necessary actions before they occur
- Producing trends of current utilization and estimating the future requirements
- Modelling and trending the predicted changes in IT services
- Ensuring that upgrades are budgeted, planned and implemented in a timely fashion
- Producing and maintaining a capacity plan
- Tuning (optimizing) the performance of services and components.



The reactive activities of capacity management should include:

- Monitoring, measuring, reporting and reviewing the current performance
- Responding to all capacity-related 'threshold' events and instigating corrective action
- Reacting to and assisting with specific performance issues.

## Triggers, Inputs and Outputs

### Triggers

- New and changed services requiring additional capacity
- Service breaches, capacity or performance events and alerts, including 'threshold' events.

### Inputs

- Business information from the organization's business strategy
- Service and IT information from the service strategy and the IT strategy
- Component performance and capacity information
- Service performance issue information.

### Outputs

- CMIS containing information required by the sub-processes within capacity management
- Capacity plan
- Service performance information and reports.

## IT Service Continuity Management

### Overview

As technology is a core component of most business processes, high availability of Information Technology (IT) is critical to the survival of the business as a whole. This is achieved by introducing risk reduction measures

and recovery options. Like all elements of IT service management, successful implementation of the IT Service Continuity Management (ITSCM) process can only be achieved with senior management commitment and the support of all members of the organization. Ongoing maintenance of the recovery capability is essential if it is to remain effective.

Service continuity is an essential part of the warranty of a service. If a service's continuity cannot be maintained and/or restored in accordance with the requirements of the business, then the business will not experience the value that has been promised. Without continuity the utility of the service cannot be accessed.

### Purpose and Objective

The purpose of IT service continuity management (ITSCM) is to support the overall business continuity management (BCM) process by ensuring that the IT service provider can always provide minimum agreed business continuity related service levels.

The objectives of ITSCM are to:

- Maintain a set of IT service continuity plans and IT recovery plans that support the overall business continuity plans (BCPs) and, in support of this, to carry out regular BIA, risk analysis and management activities
- Provide advice and guidance on continuity and recovery-related issues
- Ensure that appropriate continuity mechanisms are in place to meet or exceed the agreed business continuity targets
- Assess the impact of all changes on the IT service continuity plans
- Ensure that proactive measures to improve the availability of services are implemented wherever it is cost-justifiable
- Negotiate and agree contracts with suppliers for the provision of the necessary recovery capability.

## Process Activities

A lifecycle approach should be adopted in setting up and operating ITSCM. The stages of the lifecycle form the foundation for the ITSCM activities and these are:

- Initiation
- Requirements and strategy
- Implementation
- Ongoing operation.

ITSCM is a cyclical process that ensures continuity and recovery plans exist and that they are continually aligned with the BCPs and business priorities. ITSCM should support the strategy and plans produced as a result of a BCM process.

## Triggers, Inputs and Outputs

### Triggers

- New or changed business needs or services
- New or changed targets within agreements
- The occurrence of a major incident that requires assessment for potential invocation of either business or IT continuity plans
- Periodic activities such as the BIA or risk assessment activities.

### Inputs

- Business information from the organization's business strategy
- IT information from the IT strategy and plans
- Business continuity strategy and plans
- Change schedule and assess all changes for their impact on all ITSCM plans.

### Outputs

- Revised ITSCM policy and strategy
- A set of ITSCM plans
- BIA exercises and reports
- Risks assessment and management reviews and reports
- ITSCM testing schedule.

## Information Security Management

### Overview

Information security is a management process within the corporate governance framework, which provides the strategic direction for security activities and ensures objectives are achieved. It further ensures that the information security risks are appropriately managed and that enterprise information resources are used responsibly. Information security management provides a focus for all aspects of IT security and manages all IT security activities.

Information security is a critical part of the warranty of a service. If the security of a service's information and information processing cannot be maintained at the levels required by the business, then the business will not experience the value that has been promised. Without information security the utility of the service cannot be accessed.

*Note: Information security management needs to be considered within the overall corporate governance framework.*

### Purpose and Objective

Information security management (ISM) is a governance activity within the corporate governance framework. It provides the strategic direction and is the focal point for all security activities. It ensures the objectives are achieved, that information security risks are managed and that enterprise information resources are used responsibly.

The purpose of ISM is to align IT security with business security and to ensure it matches the agreed needs of the business.

The objective is to protect the interests of those relying on information, and the systems and communications that deliver the information, from harm as a result of failures of confidentiality, integrity and availability.

## Process Activities

The key activities of ISM are:

- Produce, review and revise the information security policy
- Communicate, implement and enforce the security policies
- Assess and classify all information assets and documentation
- Implement and improve a set of security controls and risk responses
- Monitor and manage all security breaches and major security incidents
- Analyze, report on and take actions to reduce the volumes and impact of security incidents
- Schedule and complete security reviews, audits and penetration tests.

## Triggers, Inputs and Outputs

### Triggers

- New or changed corporate governance guidelines
- New or changed business security policy
- New or changed business needs or services
- Service or component security breaches.

### Inputs

- Business information from the organization's business strategy
- Governance and security from corporate governance and business security policies
- Details of security events and breaches
- Risk assessment processes and reports.

### Outputs

- The information security policy
- An SMIS

- A set of security controls
- Security audits and audit reports.

## Supplier Management

### Overview

The supplier management process ensures that suppliers and the services they provide are managed to support IT service targets and business expectations. The aim of this section is to raise awareness of the business context of working with partners and suppliers, and how this work can best be directed toward realising business benefit for the organization.

It is essential that supplier management processes and planning are involved in all stages of the service lifecycle, from strategy and design, through transition and operation, to improvement. Complex business demands require the complete breadth of skills and capability to support provision of a comprehensive set of IT services to a business; therefore the use of value networks and the suppliers and the services they provide are an integral part of any end-to-end solution. Suppliers and the management of suppliers and partners are essential to the provision of quality IT services.

### Purpose and Objective

The purpose of supplier management is to obtain value for money from suppliers and to provide seamless quality of service to the business.

The objectives of supplier management are to:

- Obtain value for money from all suppliers and contracts
- Ensure that underpinning contracts (UCs) and agreements with suppliers are aligned with business needs, and support and align with agreed targets
- Manage supplier performance and relationships with the suppliers
- Negotiate and agree contracts with suppliers and manage them throughout their lifecycle
- Maintain a supplier policy and a supporting supplier and contract management information system (SCMIS).

## Process Activities

The activities of supplier management can be summarized in this way:

- Definition of new supplier and contract requirements
- Evaluation of new suppliers and contracts
- Supplier and contract categorization and maintenance of the SCMIS
- Establishment of new suppliers and contracts
- Supplier, contract and performance management
- Contract renewal or termination.

## Triggers, Inputs and Outputs

### Triggers

- New or changed corporate governance guidelines
- New or changed business strategies, needs or new or changed services
- Requirements for new contracts
- Re-categorization of suppliers.

### Inputs

- Business information from the organization's business strategy
- Supplier and contracts strategy
- Supplier plans and strategies
- Supplier contracts, agreements and targets
- Supplier and contract performance information.

### Outputs

- Supplier and Contract Management information system (SCMIS)
- Supplier and Contract Performance information and reports
- Supplier and Contract review meeting minutes
- Supplier Service Improvement Plans (SIPs).

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