

ITIL[®] 2011 Foundation for Service Management



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ITIL® Foundation in IT Service Management

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Course Objectives

- The purpose of the ITIL Foundation certificate in IT Service Management is to certify that the candidate has gained knowledge of the ITIL terminology, structure and basic concepts and has comprehended the core principles of ITIL practices for service management.
- The course is not enough to enable the participants to apply the ITIL® practices for Service Management without further guidance.
- Candidates can expect to gain competencies in the following upon successful completion of the course
 - Service Management as a practice (Comprehension)
 - The ITIL Service Lifecycle (Comprehension)
 - Key Principles and Models (Comprehension)
 - Generic Concepts and Definitions (Awareness)
 - Selected Processes (Awareness)
 - Selected Roles (Awareness)
 - Selected Functions (Awareness)
 - Technology and Architecture (Awareness)
 - Competence and Training (Awareness)

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Service Lifecycle Modules

The Service Lifecycle series is focused on each stage of the Lifecycle and syllabuses are matched to each of the five core practice areas. A certificate exam is given for each module. Each module of the Lifecycle series covers an introduction to the Service Lifecycle, the principles, processes, functions and activities within that stage of the ITIL Service Management Lifecycle, along with technology and implementation

The Lifecycle modules are

Service Strategy -
 Service Design -
 Service Transition -
 Service Operation
 Continual Service Improvement

Service Capability modules

The Service Capability series is focused on role based clusters in a modular set, each with a certification. Each cluster contains groupings of processes and roles from within ITIL IT Service Management, intended to offer candidates a balanced knowledge of ITIL practices which have direct interaction and dependencies in their daily use.

The Capability modules are

OSA – PPO – RCV - SOA







Best Practices - need > Organizations seek to close gaps in capabilities in order to Be more competitive By Improving their ability To deliver quality services Meet the customer needs At a price that customer can afford > Adoption of Best practices is one of the way to close the Gaps Sources of "best practices" Public frameworks - ITIL Standards – ISO 20000 Proprietary knowledge of Organization Individuals ITIL® is a Registered Trade Mark of AXELOS Limited. 7 QAI | QAI

Reader's Note









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Why ITIL is Successful

- > ITIL embraces a practical approach to service management -Do what works
 - Vendor-neutral
 - Non-prescriptive
 - Best practice
- ITIL is successful because it describes practices that enable organizations to deliver benefits, return on investment and sustained success

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- Vendor-neutral ITIL service management practices are applicable in any IT organization because they are not based on any particular technology platform or industry type. ITIL is owned by the UK government and is not tied to any commercial proprietary practice or solution.
- Non-prescriptive ITIL offers robust, mature and time-tested practices that have applicability to all types of service organization. It continues to be useful and relevant in public and private sectors, internal and external service providers, small, medium and large enterprises, and within any technical environment. Organizations should adopt ITIL and adapt it to meet the needs of the IT organization and their customers.
- Best practice ITIL represents the learning experiences and thought leadership of the world's best-in-class service providers.







≻ MeacAr	eans of delivering value to customers by facilitating the outcomes customers want to chieve without the ownership of specific costs and risks n IT service is made up of a combination of Information technology
≻ Ar	 IT service is made up of a combination of Information technology Receptor
	 Information technology Recenter
	- Pooplo
	 Processes
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- Services facilitate outcomes by enhancing the performance of associated tasks and reducing the effect of constraints. These constraints may include regulation, lack of funding or capacity, or technology limitations. The end result is an increase in the probability of desired outcomes. While some services enhance performance of tasks, others have a more direct impact – they perform the task itself.
- An outcome-based definition of service moves IT organizations beyond business–IT alignment towards business–IT integration. Internal dialogue and discussion on the meaning of services is an elementary step towards alignment and integration with a customer's business
- Customer outcomes become the ultimate concern of business relationship managers instead of the gathering of requirements, which is necessary but not sufficient. Requirements are generated for internal coordination and control only after customer outcomes are well understood



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Types of Services

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Customer-facing services: IT services that are seen by the customer. These are typically services that support the customer's business units/business processes, directly facilitating some outcome or outcomes desired by the customer.

Supporting services: IT services that support or 'underpin' the customer-facing services. These are typically invisible to the customer, but essential to the delivery of customer-facing IT services.

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Supporting services may be of many different types or go by many different names, such as infrastructure services, network services, application services or technical services. Whatever terms are used by a service provider to describe the different types of supporting service they may choose to recognize, the use and scope of each term should be clearly defined and agreed within the organization to avoid confusion





Value is captured by the customer of two elements of a Service: Utility or fitness for purpose and warranty or fitness for use.

Utility is the functionality offered by a product or service to meet a particular need. Utility can be summarized as 'what the service does', and can be used to determine whether a service is able to meet its required outcomes, or is 'fit for purpose'.

Warranty is an assurance that a product or service will meet its agreed requirements. Warranty can be summarized as 'how the service is delivered', and can be used to determine whether a service is 'fit for use'.

Utility is used to improve the performance of the tasks required to achieve an outcome, or to remove constraints that prevent the task from being performed adequately (or both). Warranty requires the service to be available, continuous and secure and to have sufficient capacity for the service to perform at the required level. If the service is both fit for purpose and fit for use, it will create value.

Utility is what the customer gets, and warranty is how it is delivered.

Customers cannot benefit from something that is fit for purpose but not fit for use, and vice versa.





Asset: Any resource or capability.

Customer asset: Any resource or capability used by a customer to achieve a business outcome.

Service asset: Any resource or capability used by a service provider to deliver services to a customer

Capabilities are typically experience-driven, knowledge-intensive, information-based and firmly embedded within an organization's people, systems, processes and technologies.

Capabilities by themselves cannot produce value without adequate and appropriate resources. The productive capacity of a service provider is dependent on the resources under its control. Capabilities are used to develop, deploy and coordinate this productive capacity.



Services & Customers

Customers

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- Internal customers
- External customers

Services

- Internal Services
 - · Supporting service
- External Services
 - Internal Customer Facing
 - External Customer Facing





- · Internal customers are people or departments who work in the same organization as the service provider
- External customers are people who are not employed by the organization, or organizations that are separate legal entities, that purchase services from the service provider in terms of a legally binding contract or agreement.
- Internal customer-facing service: An IT service that directly supports a business process managed by another business unit for example, sales reporting service, enterprise resource management.
- External customer-facing service: An IT service that is directly provided by IT to an external customer for example, internet access at an airport
- Supporting service: A service that is not directly used by the business, but is required by the IT service
 provider so they can provide other IT services for example, directory services, naming services, the
 network or communication services.

Internal and external services is to differentiate between services that support an internal activity, and those that actually achieve business outcomes.

it is important to recognize that internal services have to be linked to external services before their contribution to business outcomes can be understood and measured. This is especially important when measuring the return on investment of services









Service Management	
Service management: A set of specialized organizational capate to customers in the form of services.	pilities for providing value
The act of transforming capabilities and resources into valuable service management.	services is at the core of
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Service management capabilities are influenced by the following challenges that distinguish services from other systems of value creation, such as manufacturing, mining and agriculture:

Intangible nature of the output and intermediate products of service processes: they are difficult to measure, control and validate (or prove)

Demand is tightly coupled with the customer's assets: users and other customer assets such as processes, applications, documents and transactions arrive with demand and stimulate service production

High level of contact for producers and consumers of services: there is little or no buffer between the service provider's creation of the service and the customer's consumption of that service

The perishable nature of service output and service capacity: there is value for the customer from assurance on the continued supply of consistent quality. Providers need to secure a steady supply of demand from customers.



The 4 Ps







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P	rocess
>	A process is a structured set of activities designed to accomplish a specific objective
\checkmark	A process takes one or more defined inputs and turns them into defined outputs
A	 The four characteristics of Process Measurability Specific results Customers Responsiveness to specific triggers
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Processes define actions, dependencies and sequence. Well-defined processes can improve productivity within and across organizations and functions. Process characteristics include:

Measurability We are able to measure the process in a relevant manner. It is performance-driven. Managers want to measure cost, quality and other variables while practitioners are concerned with duration and productivity.

Specific results The reason a process exists is to deliver a specific result. This result must be individually identifiable and countable.

Customers Every process delivers its primary results to a customer or stakeholder. Customers may be internal or external to the organization, but the process must meet their expectations.

Responsiveness to specific triggers While a process may be ongoing or iterative, it should be traceable to a specific trigger





A process is organized around a set of objectives. The main outputs from the process should be driven by the objectives and should include process measurements (metrics), reports and process improvement.

The output produced by a process has to conform to operational norms that are derived from business objectives. If products conform to the set norm, the process can be considered effective (because it can be repeated, measured and managed, and achieves the required outcome). If the activities of the process are carried out with a minimum use of resources, the process can also be considered efficient.

Inputs are data or information used by the process and may be the output from another process.

A process, or an activity within a process, is initiated by a trigger. A trigger may be the arrival of an input or other event. For example, the failure of a server may trigger the event management and incident management processes.

A process may include any of the roles, responsibilities, tools and management controls required to deliver the outputs reliably. A process may define policies, standards, guidelines, activities and work instructions if they are needed.

Processes, once defined, should be documented and controlled











Service Strategy represents policies and objectives.

- The Service Design stage of the lifecycle starts with a set of new or changed business requirements and ends with the development of a service solution designed to meet the documented needs of the business.
- This developed solution is then passed to Service Transition to evaluate, build, test and deploy the new or changed service
- On completion of these transition activities; control is transferred to the Service Operation stage of the service lifecycle.
- Continual Service Improvement represents learning and improvement





Service Strategy; At the centre of the service lifecycle is service strategy. ITIL Service Strategy provides guidance on how to view service management not only as an organizational capability but as a strategic asset.

Service design is the stage in the lifecycle that turns a 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.

ITIL Service Transition provides guidance for the development and improvement of capabilities for introducing new and changed services into supported environments. It ensures that the value(s) identified in the service strategy, and encoded in service design, are effectively transitioned so that they can be realized in service operation.

ITIL Service Operation describes best practice for managing services in supported environments. It includes guidance on achieving effectiveness and efficiency in the delivery and support of services to ensure value for the customer, the users and the service provider.

ITIL Continual Service Improvement provides guidance on creating and maintaining value for customers through better strategy, design, transition and operation of services. It combines principles, practices and methods from quality management, change management and capability improvement.



Business Case
A business case is a decision support and planning tool that projects the likely consequences of a business action. The consequences can take on qualitative and quantitative dimensions. A financial analysis, for example, is frequently central to a good business case.
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Business objectives

The structure of a business case varies from organization to organization. What they all have in common is a detailed analysis of business impact or benefits. Business impact is in turn linked to business objectives. A business objective is the reason for considering a service management initiative in the first place.



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Risk Management

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Ensuring that risks are identified and that measures are put in place to mitigate them.

Identifying and Managing risk involves

- o Planning for risk management
 - · Identifying the risks
 - · Analyzing the risks
- Managing risks

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Identifying the Risks: Get as many ideas as possible about what might threaten the success of a project or strategy

Analyzing the Risks: Risk management approaches use both qualitative and quantitative techniques for analyzing the risks.

Managing the Risks: Once the risks have been assessed and documented, together with their action plans, the risk management plan must be reviewed regularly



F	unctions and Roles
>	Functions: A function is a team or group of people and the tools or other resources they use to carry out one or more processes or activities.
À	Roles: A role is a set of responsibilities, activities and authorities granted to a person or team. A role is defined in a process or function.
~	One person or team may have multiple roles – for example, the roles of configuration manager and change manager may be carried out by a single person.
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For the service lifecycle to be successful, an organization will need to clearly define the roles and responsibilities required to undertake the processes and activities involved in each lifecycle stage. These roles will need to be assigned to individuals, and an appropriate organization structure of teams, groups or functions will need to be established and managed. These are defined as follows:

- Group A group is a number of people who are similar in some way. In ITIL, groups refer to people who
 perform similar activities even though they may work on different technologies or report into different
 organizational structures or even different companies. Groups are usually not formal organizational
 structures, but are very useful in defining common processes across the organization for example,
 ensuring that all people who resolve incidents complete the incident record in the same way.
- Team A team is a more formal type of group. These are people who work together to achieve a common
 objective, but not necessarily in the same organizational structure. Team members can be co-located, or
 work in multiple locations and operate virtually. Teams are useful for collaboration, or for dealing with a
 situation of a temporary or transitional nature. Examples of teams include project teams, application
 development teams (often consisting of people from several different business units) and incident or
 problem resolution teams.
- Department Departments are formal organizational structures which exist to perform a specific set of defined activities on an ongoing basis. Departments have a hierarchical reporting structure with managers who are usually responsible for the execution of the activities and also for day-to-day management of the staff in the department.
- Division A division refers to a number of departments that have been grouped together, often by geography or product line. A division is normally self-contained



nsibilities in relation to processes and activities
ACI model enables decisions to be made with pace and confidence.
is an acronym for the four main roles of being:
Responsible: The person or people responsible for correct execution – for getting the job done
Accountable: The person who has ownership of quality and the end result. Only one person can be accountable for each task
Consulted: The people who are consulted and whose opinions are sought. They have involvement through input of knowledge and information
Informed: The people who are kept up to date on progress. They receive information about process execution and quality.

When designing a service or a process, it is imperative that all the roles are clearly defined. A trademark of highperforming organizations is the ability to make the right decisions quickly and execute them effectively. Whether the decision involves a strategic choice or a critical operation, being clear on who has input, who decides and who takes action will enable the organization to move forward rapidly.

Whether RACI or some other tool or model is used, the important thing is to not just leave the assignment of responsibilities to chance or leave it to the last minute to decide. Conflicts can be avoided and decisions can be made quickly if the roles are allocated in advance.





Service owner role: To ensure that a service is managed with a business focus, the definition of a single point of accountability is absolutely essential to provide the level of attention and focus required for its delivery.

The service owner is accountable for the delivery of a specific IT service. The service owner is responsible to the customer for the initiation, transition and ongoing maintenance and support of a particular service and accountable to the IT director or service management director for the delivery of the service. The service owner's accountability for a specific service within an organization is independent of where the underpinning technology components, processes or professional capabilities reside

Process owner role: The process owner role is accountable for ensuring that a process is fit for purpose. This role is often assigned to the same person who carries out the process manager role, but the two roles may be separate in larger organizations. The process owner role is accountable for ensuring that their process is performed according to the agreed and documented standard and meets the aims of the process definition

Process manager role: The process manager role is accountable for operational management of a process. There may be several process managers for one process, for example regional change managers or IT service continuity managers for each data centre. The process manager role is often assigned to the person who carries out the process owner role, but the two roles may be separate in larger organizations

Process practitioner role: A process practitioner is responsible for carrying out one or more process activities. In some organizations, and for some processes, the process practitioner role may be combined with the process manager role; in others there may be large numbers of practitioners carrying out different parts of the process





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Service Strategy - Purpose and Objectives

Purpose: Define the perspective, position, plans and patterns that a service provider needs to be able to execute to meet an organization's business outcomes.

Objectives:

The objectives of Service Strategy includes providing:

- > An understanding of what strategy is
- > A clear identification of the definition of services and the customers who use them
- > The ability to define how value is created and delivered
- > A means to identify opportunities to provide services and how to exploit them
- > A clear service provision model

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Service Strategy - Purpose and Objectives

Objectives:

- The means to understand the organizational capability required to deliver the strategy
- Documentation and coordination of how service assets are used to deliver services, and how to optimize their performance
- Processes that define the strategy of the organization, which services will achieve the strategy, what level of investment will be required, at what levels of demand, and the means to ensure a working relationship exists between the customer and service provider.

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S	ervice Portfolio	
>	A Service portfolio is the complete set of services that is managed by a service provider.	
\checkmark	The Service Portfolio represents the commitments and investments made by a service provider across all customers and market spaces.	
	The portfolio also includes third-party services	
	The Service Portfolio represents all the resources presently engaged or being released in various phases of the Service Lifecycle.	
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Service Portfolio represents present contractual commitments, new service development, and ongoing service improvement plans initiated by Continual Service Improvement. The portfolio also includes third-party services, which are an integral part of service offerings to customers. Some third-party services are visible to the customers (e.g. desktop repairs) while others are not (e.g. wide area networking services).

The service portfolio also identifies those services in a conceptual stage, namely all services the organization would provide if it had unlimited resources, capabilities and funding. This documentation exercise facilitates understanding of the opportunity costs of the existing portfolio and better fiscal discipline.

The Service Portfolio is divided into three phases: Service Catalogue, Service Pipeline and Retired Services





The Service Portfolio represents all the resources presently engaged or being released in various phases of the Service Lifecycle. Each phase requires resources for completion of projects, initiatives and contracts. This is a very important governance aspect of Service Portfolio Management (SPM).

Entry, progress and exit are approved only with approved funding and a financial plan for recovering costs or showing profit as necessary. The Portfolio should have the right mix of services in the pipeline and catalogue to secure the financial viability of the service provider. The Service Catalogue is the only part of the Portfolio that recovers costs or earns profits.



S	ervice Catalogue	
	A database or structured Document with information about services presently active and those approved to be offered to current or prospective customers	
	The Service Catalogue is the only part of the Service Portfolio published to Customers, and is used to support the sale and delivery of IT Services.	
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The catalogue is useful in developing solutions for customers from one or more services. Items in the catalogue can be configured and suitably priced to fulfil a particular need. The service catalogue is an important tool for service strategy because it represents the service provider's actual and present capabilities. Many customers are only interested in what the provider can commit now, rather than in future.

In addition, the service catalogue serves as a service order and demand channelling mechanism. It defines and communicates the policies, guidelines and accountability required for the service provider to deliver and support services to its customers.



Governance	
Governance ensures that policies and strategy are actual required processes are correctly followed. Governance in responsibilities, measuring and reporting, and taking action identified.	lly implemented, and that cludes defining roles and ons to resolve any issues
Governance defines the common directions, policies and ru and IT use to conduct business.	les that both the business
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Governance is the single overarching area that ties IT and the business together, and services are one way of ensuring that the organization is able to execute that governance. Governance is what defines the common directions, policies and rules that both the business and IT use to conduct business.

Many ITSM strategies fail because they try to build a structure or processes according to how they would like the organization to work instead of working within the existing governance structures.

Governance needs to be able to evaluate, direct and monitor the strategy, policies and plans.



Patterns of Business Activity	
Business activity generates demand for services. Customer ass processes and applications all perform business activities.	ets such as people,
These patterns of business activity (PBA) represent the dynamic and include interactions with customers, suppliers, partners and	cs of the business I other stakeholders.
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PBA operate in a dynamic environment, they are often dynamic themselves. However, since services often directly support one or more PBA, and since PBA achieve business outcomes it is important that they are properly understood and aligned to services.













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Service Portfolio Management - Objectives

- Provide a process and mechanisms to enable an organization to investigate and decide on which services to provide, based on an analysis of the potential return and acceptable level of risk
- Maintain the definitive portfolio of services provided, articulating the business needs each service meets and the business outcomes it supports
- > Analyse which services are no longer viable and when they should be retired.

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Financial Management for IT Services

Financial management for IT services is the process responsible for managing an IT service provider's budgeting, accounting and charging requirements.

Purpose: The purpose of financial management for IT services is:

- To secure the appropriate level of funding to design, develop and deliver services that meet the strategy of the organization.
- To ensures that the service provider does not commit to services that they are not able to provide.
- > To identifies the balance between the cost and quality of service and maintains the balance of supply and demand between the service provider and their customers.





Financial Management - Objectives

- Defining and maintaining a framework to identify, manage and communicate the cost of providing services.
- > Evaluating the financial impact of new or changed strategies on the service provider.
- Understanding the relationship between expenses and income and ensuring that the two are balanced according to the organization's financial policies.
- > Accounting for money spent on the creation, delivery and support of services.
- Forecasting the financial requirements for the organization to be able to meet its service commitments to its customers, and compliance with regulatory and legislative requirements.
- Where appropriate, defining a framework to recover the costs of service provision from the customer.







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Financial Management- Scope

Financial management consists of three main processes:

- Budgeting is the process of predicting and controlling the income and expenditure of money within the organization. Budgeting consists of a periodic negotiation cycle to set budgets (usually annual) and the monthly monitoring of the current budgets.
- Accounting is the process that enables the IT organization to account fully for the way its money is spent. It usually involves accounting systems.
- Charging is the process required to bill customers for the services supplied to them. This requires sound IT accounting practices and systems.

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There are two distinct cycles associated with accounting, budgeting and charging:

A planning cycle (annual), where cost projections and workload forecasting form a basis for cost calculations and price setting

An operational cycle (monthly or quarterly) where costs are monitored and checked against budgets, bills are issued and revenue collected.



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Business Relationship Management

Business relationship management is the process that enables BRMs to provide links between the service provider and customers at the strategic and tactical levels. The purpose of these links is to ensure that the service provider understands the business requirements of the customer and is able to provide services that meet these needs.

Purpose:

- To establish and maintain a business relationship between the service provider and the customer based on understanding the customer and its business needs.
- Identify customer needs and ensure that the service provider is able to meet these needs as business needs change over time and between circumstances.
- Ensures that service provider is able to meet the customer's expectations before agreeing to deliver the service.





Business Relationship Management - Objectives Ensure that the service provider understands the customer's perspective of service, \geq and is therefore able to prioritize its services and service assets appropriately > Ensure high levels of customer satisfaction, indicating that the service provider is meeting the customer's requirements Identify changes to the customer environment that could potentially impact the type, \succ level or utilization of services provided Identify technology trends that could potentially impact the type, level or utilization of \geq services provided Mediate in cases where there are conflicting requirements for services from different business units > Establish formal complaints and escalation processes for the customer. 48 ITIL® is a Registered Trade Mark of AXELOS Limited. **QAI**





Business Relationship Management - Scope

Business relationship management focuses on understanding how services meet customer requirements. To achieve this, the process must focus on understanding and communicating: > Business outcomes that the customer wants to achieve > Services that are currently offered to the customer, and the way in which they are used by the customer > Technology trends that could impact current services and the customer, and the nature of the potential impact > Levels of customer satisfaction, and what action plans have been put in place to deal with the causes of dissatisfaction > How the service provider is represented to the customer. This at times means raising concerns around commitments that the business made to IT but is not meeting. 49 ITIL® is a Registered Trade Mark of AXELOS Limited. QAI QAI







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Service Design – Scope

Scope:

Provides guidance for the design of appropriate and innovative IT services to meet current and future agreed business requirements.

Service Design Processes:

- Design Coordination
- Service Catalogue Management
- Service Level Management
- Availability Management
- Capacity Management
- IT Service Continuity Management
- Information Security Management
- Supplier management

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Provides guidance for the design of appropriate and innovative IT services to meet current and future agreed business requirements.

Describes the principles of service design and looks at identifying, defining and aligning the IT solution with the business requirement.

It also introduces the concept of the service design package and looks at selecting the appropriate service design model







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Service Design- Five major aspects
Service solutions for new or changed services
Management information systems and tools, (especially the service portfolio, including the service catalogue)
Fechnology architectures and management architectures
The processes required
Measurement methods and metrics.
A holistic approach should be adopted for all service design aspects and areas to ensure consistency and integration within all activities and processes across the entire IT technology, providing end-to-end business-related functionality and quality.
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It is important that a holistic, results-driven approach to all aspects of design is adopted, and that when changing or amending any of the individual elements of design all other aspects are considered. When designing and developing a new application, this should not be done in isolation, but should also consider the impact on the overall service, the management information systems and tools (e.g. service portfolio and service catalogue), the architectures, the technology, the service management processes, and the necessary measurements and metrics. This will ensure not only that the functional elements are addressed by the design, but also that all of the management and operational requirements are addressed as a fundamental part of the design and are not added as an afterthought.



Service Design Package

- Document(s) defining all aspects of an IT service and its requirements through each stage of its lifecycle.
- A 'service design package' (SDP) should be produced during the design stage, for each new service, major change to a service or removal of a service or changes to the 'service design package' itself.
- This pack is then passed from service design to service transition and details all aspects of the service and its requirements through all of the subsequent stages of its lifecycle.

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Contents of the Service Design Package:

- Requirements
- Service Design
- Organizational Readiness Assessment
- Service Lifecycle Plan
- Service Acceptance Criteria









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Reader's Note



SI	LM - Scope	
>	Existing Services	
≻	New Requirements of New Service or Changed Service	
\blacktriangleright	Manage Expectations	
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The SLM process should include:

- Cooperation with the business relationship management process
- Negotiation and agreement of future service level requirements and targets, and the documentation and management of SLRs for all proposed new or changed services
- Negotiation and agreement of current service level requirements and targets, and the documentation
 and management of SLAs for all operational services
- Development and management of appropriate OLAs to ensure that targets are aligned with SLA targets
- Review of all supplier agreements and underpinning contracts
- · Proactive prevention of service failures, reduction of service risks and improvement
- Reporting and management of all service level achievements and review of all SLA breaches
- · Periodic review, renewal and/or revision of SLAs, service scope and OLAs as appropriate
- · Identifying improvement opportunities for inclusion in the CSI register
- Reviewing and prioritizing improvements in the CSI register
- Instigating and coordinating SIPs for the management, planning and implementation

The SLM process does not include:

- Negotiation and agreement of requirements for service functionality (utility), except to the degree functionality influences a service level requirement or target
- · Detailed attention to the activities necessary to deliver service levels
- Negotiation of underpinning supplier contracts and agreements









Se	ervice Level Agreement
	An SLA is a written agreement between an IT service provider and the IT customer(s), defining the key service targets and responsibilities of both parties.
Α	An SLA will typically define the warranty a service is to deliver and describe the utility of the service. Service-specific level SLA Customer level SLA or business unit level SLA Corporate level SLA
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The emphasis must be on agreement, and SLAs should not be used as a way of holding one side or the other to ransom. A true partnership should be developed between the IT service provider and the customer, so that a mutually beneficial agreement is reached – otherwise the SLA could quickly fall into disrepute and a 'blame culture' could develop that would prevent any true service quality improvements from taking place.





Service-based SLA: This may appear fairly straightforward. However, difficulties may arise if the specific requirements of different customers vary for the same service, or if characteristics of the infrastructure mean that different service levels are inevitable (e.g. head office staff may be connected via a high-speed LAN, while local offices may have to use a lower-speed WAN line). In such cases, separate targets may be needed within the one agreement. Difficulties may also arise in determining who should be the signatories to such an agreement. However, where common levels of service are provided across all areas of the business (for example, email or telephony), the service-based SLA can be an efficient approach to use. Multiple classes of service (for example, gold, silver and bronze) can also be used to increase the effectiveness of service-based SLAs.

Customer-based SLA: Customers often prefer such an agreement, as all of their requirements are covered in a single document. Only one signatory is normally required, which simplifies this issue.





Reader's Note











Reader's Note





Reader's Note



Scope: To provide and maintain accurate information on all services that are being transitioned or have been transitioned to the live environment.

The service catalogue management process covers:

- Contribution to the definition of services and service packages
- Development and maintenance of service and service package descriptions appropriate for the service catalogue
- Production and maintenance of an accurate service catalogue
- Interfaces, dependencies and consistency between the service catalogue and the overall service portfolio
- Interfaces and dependencies between all services and supporting services within the service catalogue and the CMS
- Interfaces and dependencies between all services, and supporting components and configuration items (CIs) within the service catalogue and the CMS.

The service catalogue management process does not include:

- Detailed attention to the capturing, maintenance and use of service asset and configuration data as performed through the service asset and configuration management process (see ITIL Service Transition)
- Detailed attention to the capturing, maintenance and fulfilment of service requests as performed through request fulfilment (see ITIL Service Operation).





Reader's Note



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Availability Management - Objective **Objectives:** > Produce and maintain an appropriate and up-to-date availability plan that reflects the current and future needs of the business > Provide advice and guidance to all other areas of the business and IT on all availability-related issues > Ensure that service availability achievements meet all their agreed targets by managing services and resources-related availability performance > Assist with the diagnosis and resolution of availability-related incidents and problems > Assess the impact of all changes on the availability plan and the availability of all services and resources > Ensure that proactive measures to improve the availability of services are implemented wherever it is cost-justifiable to do so. ITIL® is a Registered Trade Mark of AXELOS Limited. 70 **QAI**

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Availability Management - Scope

Scope: To design, implement, measure, manage and improve availability of IT components and services.

Availability Management Process includes two type of activities:

- Reactive activities These involve the monitoring, measuring, analysis and management of all events, incidents and problems involving unavailability. These activities are principally performed as part of the operational roles.
- Proactive activities These involve the proactive planning, design and improvement of availability. These activities are principally performed as part of the design and planning roles.

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The availability management process should include:

- Monitoring of all aspects of availability, reliability and maintainability of IT services and the supporting components, with appropriate events, alarms and escalation, with automated scripts for recovery
- Maintaining a set of methods, techniques and calculations for all availability measurements, metrics and reporting
- Actively participating in risk assessment and management activities
- Collecting measurements and the analysis and production of regular and ad hoc reports on service and component availability
- · Understanding the agreed current and future demands of the business for IT services and their availability
- · Influencing the design of services and components to align with business availability needs
- Producing an availability plan that enables the service provider to continue to provide and improve services in line with availability targets defined in SLAs, and to plan and forecast future availability levels required, as defined in SLRs
- · Maintaining a schedule of tests for all resilience and fail-over components and mechanisms
- Assisting with the identification and resolution of any incidents and problems associated with service or component unavailability
- Proactively improving service or component availability wherever it is cost-justifiable and meets the needs
 of the business.




Service Availability: This involves all aspects of service availability and unavailability and the impact of component availability, or the potential impact of component unavailability on service availability.

Component Availability: This involves all aspects of component availability and unavailability.

Reliability: It is a measure of how long a service, component or CI can perform its agreed function without interruption.

Maintainability: Maintainability is a measure of how quickly and effectively a service, component or CI can be restored to normal working after a failure.

Serviceability: Serviceability is the ability of a third-party supplier to meet the terms of its contract.

Vital Business Functions(VBF): The term vital business function (VBF) is used to reflect the part of a business process that is critical to the success of the business.



Pu inte ma	pose: To align IT security with business security and egrity and availability of the organization's assets, infort thes the agreed needs of the business.	ensure that the confidentiality, mation, data and IT services alway
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Supplier Management - Scope Scope: The supplier management process should include the management of all suppliers and contracts needed to support the provision of IT services to the business. Each service provider should have formal processes for the management of all suppliers and contracts. . The supplier management process should include: Implementation and enforcement of the supplier policy Maintenance of a SCMIS Supplier and contract categorization and risk assessment Supplier and contract evaluation and selection Development, negotiation and agreement Contract review, renewal and termination Management of suppliers and supplier performance Identification of improvement opportunities for inclusion in the CSI register, and the implementation of service and supplier improvement plans Maintenance of standard contracts, terms and conditions > Management of contractual dispute resolution Management of sub-contracted suppliers. 79 ITIL® is a Registered Trade Mark of AXELOS Limited. QAI QAI

IT supplier management often has to comply with organizational or corporate standards, guidelines and requirements, particularly those of corporate legal, finance and purchasing,













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Capacity Management - Scope

Scope:

- The capacity management process should be the focal point for all IT performance and capacity issues.
- The process should encompass all areas of technology, both hardware and software, for all IT technology components and environments.
- Capacity management should also consider space planning and environmental systems capacity as well as certain aspects of human resources.
- Capacity management could consider human resource capacity where a lack of human resources could result in a breach of SLA or OLA targets.
- In general, human resource management is a line management responsibility, although the staffing of a service desk should use identical capacity management techniques.

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The capacity management process should include:

- Monitoring patterns of business activity through performance, utilization and throughput of IT services and the supporting infrastructure, environmental, data and applications components and the production of regular and ad hoc reports on service and component capacity and performance
- Undertaking tuning activities to make the most efficient use of existing IT resources
- Understanding the agreed current and future demands being made by the customer for IT resources, and producing forecasts for future requirements
- Influencing demand in conjunction with the financial management for IT services and demand management processes
- Producing a capacity plan that enables the service provider to continue to provide services of the quality
 defined in SLAs and that covers a sufficient planning timeframe to meet future service levels required as
 defined in the service portfolio and SLRs
- Assisting with the identification and resolution of any incidents and problems associated with service or component capacity or performance
- The proactive improvement of service or component performance, wherever it is cost-justifiable and meets the needs of the business





There are many similar activities that are performed by each of the above sub-processes, but each sub-process has a very different focus. Business capacity management is focused on the current and future business requirements, while service capacity management is focused on the delivery of the existing services that support the business, and component capacity management is focused on the IT infrastructure that underpins service provision.











Discretion Continuity Management - Objective Objectives: Produce and maintain a set of IT service continuity plans that support the overall business continuity plans of the organization Complete regular BIA exercises to ensure that all continuity plans are maintained in line with changing business impacts and requirements Conduct regular risk assessment and management exercises to manage IT services within an agreed level of business risk. Provide advice and guidance to all other areas of the business and IT on all continuity-related issues Ensure that appropriate continuity mechanisms are put in place to meet or exceed the agreed business continuity targets











The IT Service Continuity Management process should include:

- The agreement of the scope of the ITSCM process and the policies adopted
- · BIA to quantify the impact loss of IT service would have on the business
- Risk assessment and management the risk identification and risk assessment to identify potential threats to continuity and the likelihood of the threats becoming reality. This also includes taking measures to manage the identified threats where this can be cost-justified. The approach to managing these threats will form the core of the ITSCM strategy and plans
- Production of an overall ITSCM strategy that must be integrated into the BCM strategy. This can be
 produced following the two steps identified above, and is likely to include elements of risk reduction as well
 as selection of appropriate and comprehensive recovery options
- Production of an ITSCM plan, which again must be integrated with the overall BCM plans
- Testing of the plans
- Ongoing operation and maintenance of the plans.













Design Coordination - Objective	
Design coordination objective	
Manage the quality criteria, requirements and handover points between design stage and service strategy and service transition	n the service
Ensure that all service models and service solution designs conform to architectural, governance and other corporate requirements	o strategic,
Ensure that all parties adopt a common framework of standard, reusal practices, whenever appropriate	ole design
> Improve the effectiveness and efficiency of service design activities an	d processes
> Monitor and improve the performance of the service design lifecycle st	age.
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Design Coordination - Scope

Scope: The scope of the Design Coordination process includes all design activity, particularly all new or changed service solutions that are being designed for transition into (or out of, in the case of a service retirement) the live environment..

The Design Coordination process includes:

- Assisting and supporting each project or other change through all the service design activities and processes
- Maintaining policies, guidelines, standards, budgets, models, resources and capabilities for service design activities and processes
- Coordinating, prioritizing and scheduling of all service design resources to satisfy conflicting demands from all projects and changes
- Planning and forecasting the resources needed for the future demand for service design activities
- Ensuring that all requirements are appropriately addressed in service designs, particularly utility and warranty requirements
- Ensuring the production of service designs and/or SDPs and their handover to service transition.

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Most design coordination process activity focuses around those design efforts that are part of a project, as well as those that are associated with changes of defined types. Typically, the changes that require the most attention from design coordination are major changes, but any change that an organization believes could benefit from design coordination may be included.

The design coordination process does not include:

Responsibility for any activities or processes outside of the design stage of the service lifecycle.

Responsibility for designing the detailed service solutions themselves or the production of the individual parts of the SDPs. These are the responsibility of the individual projects or service management processes.





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Purpose: To ensure that new, modified or retired services meet the expectations of the business as documented in the service strategy and service design stages of the lifecycle

Objectives:

- > Plan and manage service changes efficiently and effectively
- > Manage risks relating to new, changed or retired services

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- > Successfully deploy service releases into supported environments
- > Set correct expectations on the performance and use of new or changed services
- > Ensure that service changes create the expected business value
- > Provide good-quality knowledge and information about services and service assets.

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Service Transition – Scope



Service Transition considers:

•Managing the complexity associated with changes to services and service management processes

- •Allowing for innovation while minimizing the unintended consequences of change
- Introducing new services
- Changes to existing services
- •Decommissioning and discontinuation of services, applications or other service components
- •Transferring services to and from other service providers

•The scope also includes the transition of changes in the service provider's service management capabilities that will impact on the ways of working, the organization, people, projects and third parties involved in service management















A configuration record is a set of attributes and relationships about a CI. Configuration records are stored in a configuration management database (CMDB) and managed with a configuration management system (CMS). It is important to note that CIs are not stored in a CMDB; configuration records describe CIs that are stored in the CMDB.

Example of varieties of Cis:

- Service Lifecycle Cis
- Service Cis
- Organization Cis
- Internal Cis
- External Cis
- Interface Cls



Configuration Management System

- To manage large and complex IT services and infrastructures, service asset and configuration management requires the use of a supporting system known as the configuration management system
- > At the data level CMS include data from
 - Configuration records stored in several physical CMDBs
 - external data sources such as an HR database or financial database
- > The presentation layer of the CMS will contain views and dashboards that are required by people who need access to configuration information, for example
 - Change and release view
 - Technical configuration view
 - Service desk view
 - Configuration lifecycle view

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Change and release view Used by personnel responsible for change management and release and deployment management

Technical configuration view Used to support the needs of personnel in technical and application management functions

Service desk view For use by the service desk, for example when logging and managing incidents and service requests

Configuration lifecycle view Used by service asset and configuration management personnel who are responsible for managing the lifecycle of configuration items.









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Service Knowledge Management System (SKMS) The service knowledge management system Support for decisions is a set of tools and databases that are used Service Knowledge to manage knowledge, information and data. Management system Many configuration items are available in the Support for delivery of services form of knowledge or information, and these are typically stored in the SKMS - for example, a service level agreement, a report Configuration management system template or a definitive media library. The SACM process is not responsible for Configuration managing the SKMS. Some items in the management SKMS will be owned and managed by the database SACM process, but others will be owned and managed by other processes or people.

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Specifically within IT Service Management, Knowledge Management will be focused within the Service Knowledge Management System (SKMS) concerned, as its name implies, with knowledge. Underpinning this knowledge will be a considerable quantity of data, which will be held in a central logical repository or Configuration Management System (CMS) and Configuration Management Database (CMDB). However, clearly the SKMS is a broader concept that covers a much wider base of knowledge, for example:

The slide diagram is a very simplified illustration of the relationship of the three levels, with data being gathered within the CMDB, and feeding through the CMS into the SKMS and supporting the informed decision making process.





Examples of items that should be stored in an SKMS include:

- The service portfolio
- The configuration management system (CMS)
- The definitive media library (DML)
- · Service level agreements (SLAs), contracts and operation level agreements (OLAs)
- The information security policy

The supplier and contract management information system (SCMIS), including suppliers'and partners' requirements, abilities and expectations

- Budgets
- Cost models
- Business plans
- CSI register
- Service improvement plans



De	efinitive Media Library
>	The definitive media library (DML) is the secure library in which the definitive authorized versions of all media CIs are stored and protected.
~	It stores master copies of versions that have passed quality assurance checks. This library may in reality consist of one or more software libraries or file-storage areas, separate from development, test or live file store areas. It contains the master copies of all controlled software in an organization.
À	The DML should include definitive copies of purchased software (along with licence documents or information), as well as software developed on site. Master copies of controlled documentation for a system are also stored in the DML in electronic form.
\checkmark	The DML will also include a physical store to hold master copies, e.g. a fireproof safe. Only authorized media should be accepted into the DML, strictly controlled by SACM.
~	The DML is a foundation for release and deployment management
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The exact configuration of the DML is defined during the planning activities. The definition includes:

- Medium, physical location, hardware and software to be used, if kept online some service asset and configuration management support tools incorporate document or software libraries, which can be regarded as a logical part of a DML
- Naming conventions for file-store areas and physical media
- Environments supported, e.g. test and live environments
- Security arrangements for submitting changes and issuing documentation and software, plus backup and recovery procedures





The seven Service Transition processes are listed on the slide. Some of these processes are used throughout the service lifecycle, but are addressed in Service Transition since they are central to effective Service Transition.

The scope of this course include the following Service Transition processes:-

- Change Management
- Service Asset and Configuration Management
- Release and Deployment Management



The purpose of the change management process is to control the lifecycle of all changes, enabling beneficial changes to be made with minimum disruption to IT









A char config service	ge request is a formal communication seeking an alteration to one or more iration items. This could take several forms, e.g. a 'request for change' documer e desk call or project initiation document.	t,
There	are three different types of service change:	
	Standard change: A pre-authorized change that is low risk, relatively commor and follows a procedure or work instruction.	
	Emergency change: A change that must be implemented as soon as possible for example to resolve a major incident or implement a security patch.	
	Normal change: Any service change that is not a standard change or an emergency change.	

Different types of change may require different types of change request. For example, a major change may require a change proposal, which is usually created by the service portfolio management process. An organization needs to ensure that appropriate procedures and forms are available to cover the anticipated requests. Avoiding a bureaucratic approach to documenting a minor change removes some of the cultural barriers to adopting the change management process.




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Reader's Note





Reader's Note





These models are usually input to the change management support tools; the tools then automate the handling, management, reporting and escalation of the process.

R	emediation planning
>	Remediation: Actions taken to recover after a failed change or release. Remediation may include back-out, invocation of service continuity plans, or other actions designed to enable the business process to continue.
*	No change should be authorized without having explicitly addressed the question of what to do if it is not successful. Ideally, there will be a back out plan, which will restore the organization to its initial state, often through the reloading of a base lined set of CIs, especially software and data. However, not all changes are reversible, in which case an alternative approach to remediation is required.
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This remediation may require a revisiting of the change itself in the event of failure, or may be so severe that it requires invoking the organization's business continuity plan. Only by considering what remediation options are available before instigating a change, and by establishing that the remediation is viable (e.g. it is successful when tested), can the risk of the proposed change be determined and appropriate decisions taken. Change implementation plans should include milestones and other triggers for implementation of remediation in order to ensure that there is sufficient time in the agreed change window for back-out or other remediation when necessary.

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Figure shows an example of a change to the service provider's services, applications or infrastructure. Examples of the status of the change are shown in italics. Change and configuration information is updated all the way through the activities. This example shows authorization for change build and test and for change deployment. In practice there may be additional authorization steps, for example to authorize change design or change development.

- Ensure that organization and stakeholder change is managed during release and deployment activities
- Ensure that a new or changed service and its enabling systems, technology and organization are capable of delivering the agreed utility and warranty
- Record and manage deviations, risks and issues related to the new or changed service and take necessary corrective action
- Ensure that there is knowledge transfer to enable the customers and users to optimize their use of the service to support their business activities
- Ensure that skills and knowledge are transferred to service operation functions to enable them to effectively and efficiently deliver, support and maintain the service according to required warranties and service levels.

- Reader's Note

There are four phases to release and deployment Management

Release and deployment planning: Plans for creating and deploying the release are created. This phase starts with change management authorization to plan a release and ends with change management authorization to create the release.

Release build and test: The release package is built, tested and checked into the DML. This phase starts with change management authorization to build the release and ends with change management authorization for the baselined release package to be checked into the DML by service asset and configuration management. This phase only happens once for each release.

Deployment : The release package in the DML is deployed to the live environment. This phase starts with change management authorization to deploy the release package to one or more target environments and ends with handover to the service operation functions and early life support. There may be many separate deployment phases for each release, depending on the planned deployment options.

Review and close: Experience and feedback are captured, performance targets and achievements are reviewed and lessons are learned.

A	The purpose of the knowledge management process is to share perspectives, ideas, experience and information; to ensure that these are available in the right place at the right time to enable informed decisions; and to improve efficiency by reducing the need to rediscover knowledge.

The	obje	ectives of knowledge management are to:
	۶	Improve the quality of management decision making by ensuring that reliable and secure knowledge, information and data is available throughout the service lifecycle
	•	Enable the service provider to be more efficient and improve quality of service, increase satisfaction and reduce the cost of service by reducing the need to rediscover knowledge
		Ensure that staff have a clear and common understanding of the value that their services provide to customers and the ways in which benefits are realized from the use of those services
	۶	Maintain a service knowledge management system (SKMS) that provides controlle access to knowledge, information and data that is appropriate for each audience
	\blacktriangleright	Gather, analyze, store, share, use and maintain knowledge, information and data throughout the service provider organization.

Exclusions: Detailed attention to the capturing, maintenance and use of configuration data is set out in Service Asset and Configuration Management

Purpose: The purpose of the SACM process is to ensure tha	at the assets required to
deliver services are properly controlled, and that accurate ar	nd reliable information about
those assets is available when and where it is needed. This	information includes details
of how the assets have been configured and the relationship	os between assets
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Reader's Note

Sco	ope
>	The scope of SACM includes management of the complete lifecycle of every CI.
	It is important to note that many virtual assets, such as a virtual servers or networks, may be CIs and require the same management control as physical assets.
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Service asset and configuration management ensures that CIs are identified, baselined and maintained and that changes to them are controlled. It also ensures that releases into controlled environments and operational use are done on the basis of formal authorization. It provides a configuration model of the services and service assets by recording the relationships between configuration items. SACM may cover non-IT assets, work products used to develop the services and CIs required to support the service that would not be classified as assets by other parts of the business.

The scope includes interfaces to internal and external service providers where there are assets and configuration items that need to be controlled, e.g. shared assets.

Tra	nsition Planning and Support	
≻ T p	he purpose of the transition planning and support pro- lanning for service transitions and to coordinate the re	cess is to provide overall sources that they require.
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The ob	jectives of transition planning and support are to:
4	Plan and coordinate the resources to ensure that the requirements of service strategy encoded in service design are effectively realized in service operation.
	Coordinate activities across projects, suppliers and service teams where required.
	Establish new or changed services into supported environments within the predicted cost, quality and time estimates.
4	Establish new or modified management information systems and tools, technology and management architectures, service management processes, and measurement methods and metrics to meet requirements established during the service design stage of the lifecycle.
	Ensure that all parties adopt the common framework of standard re-usable processes and supporting systems in order to improve the effectiveness and efficiency of the integrated planning and coordination activities.
	Provide clear and comprehensive plans that enable customer and business change projects to align their activities with the service transition plans.

_ Reader's Note

The	scope of transition planning and support includes:
	 Maintaining policies, standards and models for service transition activities and processes
	 Guiding each major change or new service through all the service transition processes
	Coordinating the efforts needed to enable multiple transitions to be managed at the same time
	Prioritizing conflicting requirements for service transition resources
	 Planning the budget and resources needed to fulfill future requirements for service transition
	 Reviewing and improving the performance of transition planning and support activities
	Ensuring that service transition is coordinated with programme and project management, service design and service development activities.
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urp	ose	
,	Coordinate and carry out the day-to-day activities and processes deliver and manage services at agreed levels	required to
	Ongoing management of the technology that is used to deliver an services.	d support
	Monitor performance, assess metrics and gather data during Server	vice Operation.
	Strategic objectives are ultimately realized through service operat making it a critical capability.	ions, therefore
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The purpose of Service Operation is to coordinate and carry out the activities and processes required to deliver and manage services at agreed levels to business users and customers. Service Operation is also responsible for the ongoing management of the technology that is used to deliver and support services.

Well-designed and well-implemented processes will be of little value if the day-to-day operation of those processes is not properly conducted, controlled and managed. Nor will service improvements be possible if day-to-day activities to monitor performance, assess metrics and gather data are not systematically conducted during Service Operation.

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Service Operation - Objectives

Objectives

- Maintain business satisfaction and confidence in IT through effective and efficient delivery and support of agreed IT services
- > Minimize the impact of service outages on day-to-day business activities
- Ensure that access to agreed IT services is only provided to those authorized to receive those services.

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Service Operation - Scope	
Scope	
> Services	
Service Management Processes	
> Technology	
People	
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Definitions	
≻ Event	
> Alert	
> Incident	
> Problem	
Service Request	
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Event A change of state that has significance for the management of an IT service or other configuration item. The term is also used to mean an alert or notification created by any IT service, configuration item or monitoring tool. Events typically require IT operations personnel to take actions, and often lead to incidents being logged.

Alert A notification that a threshold has been reached, something has changed, or a failure has occurred. Alerts are often created and managed by system management tools and are managed by the event management process.

Incident An unplanned interruption to an IT service or reduction in the quality of an IT service. Failure of a configuration item that has not yet affected service is also an incident – for example, failure of one disk from a mirror set.

Problem A cause of one or more incidents. The cause is not usually known at the time a problem record is created, and the problem management process is responsible for further investigation.

Service Request A formal request from a user for something to be provided – for example, a request for information or advice; to reset a password; or to install a workstation for a new user. Service requests are managed by the request fulfilment process, usually in conjunction with the service desk. Service requests may be linked to a request for change as part of fulfilling the request.

Workaround	
A temporary way of overcoming the difficulties	
When a workaround is found, it is therefore important that the problem recorremains open and details of the workaround are documented within the proceed	ord oblem
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In some cases it may be possible to find a workaround to the incidents caused by the problem – a temporary way of overcoming the difficulties. For example, a manual amendment may be made to an input file to allow a program to complete its run successfully and allow a billing process to complete satisfactorily, but it is important that work on a permanent resolution continues where this is justified – in this example the reason for the file becoming corrupted in the first place must be found and corrected to prevent this happening again.

When a workaround is found, it is therefore important that the problem record remains open and details of the workaround are documented within the problem record.

In some cases there may be multiple workarounds associated with a problem. As problem investigation and diagnosis activities carry on, there may be a series of improvements that do not resolve the problem, but lead to a progressive improvement in the quality of the workarounds available. These may impact on the prioritization of the problem as successive workaround solutions may reduce the impact of future related incidents, either by reducing their likelihood or improving the speed of their resolution

Known Error & KEDB
A problem with a documented root cause and workaround
Known error record should identify the problem record it relates to and document the status of actions being taken to resolve the problem
 Root Cause
 Workaround
All known error records should be stored in the KEDB
Purpose of a KEDB is to allow storage of previous knowledge of incidents and problems – and how they were overcome – to allow quicker diagnosis and resolution if they recur
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As soon as the diagnosis is complete, and particularly where a workaround has been found (even though it may not yet be a permanent resolution), a known error record must be raised and placed in the KEDB so that if further incidents or problems arise, they can be identified and the service restored more quickly. In some cases it may be advantageous to raise a known error record even earlier in the overall process, even though the diagnosis may not be complete or a workaround found. This might be used for information purposes or to identify a root cause or workaround that appears to address the problem but hasn't been fully confirmed. Therefore, it is inadvisable to set a concrete procedural point for exactly when a known error record must be raised. It should be done as soon as it becomes useful to do so!

KEDB: The known error record should hold exact details of the fault and the symptoms that occurred, together with precise details of any workaround or resolution action that can be taken to restore the service and/or resolve the problem. An incident count will also be useful to determine the frequency with which incidents are likely to recur and influence priorities etc.

It should be noted that a business case for a permanent resolution for some problems may not exist. For example, if a problem does not cause serious disruption and a workaround exists and/or the cost of resolving the problem far outweighs the benefits of a permanent resolution, then a decision may be taken to tolerate the problem. However, it will still be desirable to diagnose and implement a workaround as quickly as possible, which is where the KEDB can help. It is essential that any data put into the database can be quickly and accurately retrieved. The problem manager should be fully trained and familiar with the search methods/algorithms used by the selected database and should carefully ensure that when new records are added, the relevant search key criteria are correctly included.

Care should be taken to avoid duplication of records. To avoid this, the problem manager should be the only person able to enter a new record

Role of Communications	
Good communication is needed with	
 IT teams and departments, 	
 Users 	
 Internal customers 	
 Between the service operation teams & Departments 	
Issues can often be prevented or mitigated with appropriate communication	
An important principle is that all communication must have an intended purpose or a resultant action.	
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A detailed description of the types of communication typical in service operation is contained in Appendix B, together with a description of the typical audience and the actions that are intended to be taken as a result of each communication. These include:

- Routine operational communication
- Communication between shifts
- Performance reporting
- Communication in projects
- Communication related to changes
- Communication related to exceptions
- Communication related to emergencies
- · Training on new or customized processes and service designs
- Communication of strategy, design and transition to service operation teams.

Please note that there is no definitive medium for communication, nor is there a fixed location or frequency. In some organizations communication has to take place in meetings. Other organizations prefer to use email or the communication inherent in their service management tools.

There should therefore be a policy around communication within each team or department and for each process. Although this should be formal, the policy should not be cumbersome or complex

	cident Management - Purpose
۲ c e	The purpose of incident management is to restore normal service operation as quickly as possible and minimize the adverse impact on business operations, thus ensuring that agreed levels of service quality are maintained.
) (2	'Normal service operation' is defined as an operational state where services and CIs are performing within their agreed service and operational levels.
_	
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Incident Management - Objectives
The objectives of the incident management process are to:
Ensure that standardized methods and procedures are used for efficient and prompt response, analysis, documentation, ongoing management and reporting of incidents
Increase visibility and communication of incidents to business and IT support staff
Enhance business perception of IT through use of a professional approach in quickly resolving and communicating incidents when they occur
Align incident management activities and priorities with those of the business
Maintain user satisfaction with the quality of IT services.
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Incident Management-Scope	
Incident management includes any event which disrupts, or which could service.	l disrupt, a
This includes events which are communicated directly by users, either the service desk or through an interface from event management to inciden management tools.	hrough the t
Incidents can also be reported and/or logged by technical staff	
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All events are not incidents. Many classes of events are not related to disruptions at all, but are indicators of normal operation or are simply informational.

Although both incidents and service requests are reported to the service desk, this does not mean that they are the same. Service requests do not represent a disruption to agreed service, but are a way of meeting the customer's needs and may be addressing an agreed target in an SLA. Service requests are dealt with by the request fulfillment process

Principles / Basic Concepts	
> Timescales	
Incident models	
Major incidents	
Incident status tracking	
Expanded incident lifecycle	
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	Problem Management
	Problem management is the process responsible for managing the lifecycle of all problems. ITIL defines a 'problem' as the underlying cause of one or more incidents.
	Purpose: The purpose of problem management is to manage the lifecycle of all problems from first identification through further investigation, documentation and eventual removal.
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Problem management seeks to minimize the adverse impact of incidents and problems on the business that are caused by underlying errors within the IT Infrastructure, and to proactively prevent recurrence of incidents related to these errors. In order to achieve this, problem management seeks to get to the root cause of incidents, document and communicate known errors and initiate actions to improve or correct the situation.

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Problem Management

Objective

The objectives of the problem management process are to:

> Prevent problems and resulting incidents from happening

- > Eliminate recurring incidents
- > Minimize the impact of incidents that cannot be prevented.

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Problem Management

Scope

Problem Management includes the activities required to diagnose the root cause of incidents and to determine the resolution to those problems. It is also responsible for ensuring that the resolution is implemented through the appropriate control procedures, especially change management and release and deployment management.

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The problem management process has both reactive and proactive aspects:

- Reactive problem management is concerned with solving problems in response to one or more incidents.
- Proactive problem management is concerned with identifying and solving problems and known errors before further incidents related to them can occur again.
- While reactive problem management activities are performed in reaction to specific incident situations, proactive problem management activities take place as ongoing activities targeted to improve the overall availability and end user satisfaction with IT services.

Examples of proactive problem management activities might include conducting periodic scheduled reviews of incident records to find patterns and trends in reported symptoms that may indicate the presence of underlying errors in the infrastructure.

- Conducting major incident reviews where review of 'How can we prevent the recurrence?' can provide identification of an underlying cause or error.
- Conducting periodic scheduled reviews of operational logs and maintenance records identifying patterns and trends of activities that may indicate an underlying problem might exist.
- Conducting periodic scheduled reviews of event logs targeting patterns and trends of warning and exception events that may indicate the presence of an underlying problem.
- Conducting brainstorming sessions to identify trends that could indicate the existence of underlying problems.
- Using check sheets to proactively collect data on service or operational quality issues that may help to detect underlying problems.







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Event Management				
Purpose: The purpose of event management is to manage events throughout their lifecycle. This lifecycle of activities to detect events, make sense of them and determine the appropriate control action is coordinated by the event management process.				

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Event management is therefore the basis for operational monitoring and control. If events are programmed to communicate operational information as well as warnings and exceptions, they can be used as a basis for automating many routine operations management activities, for example executing scripts on remote devices, or submitting jobs for processing, or even dynamically balancing the demand for a service across multiple devices to enhance performance.



Event Management-Objectives				
The	ectives of the event management process are to:			
	Detect all changes of state that have significance for the management of a CI or IT service			
	Determine the appropriate control action for events and ensure these are communicated to the appropriate functions			
	Provide the trigger, or entry point, for the execution of many service operation processes and operations management activities			
	Provide the means to compare actual operating performance and behavior against design standards and SLAs			
	Provide a basis for service assurance and reporting; and service improvement.			
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Event Management-Scope
Event management can be applied to any aspect of service management that needs to be controlled and which can be automated.
This includes:
Configuration items (CIs):Some CIs will be included because they need to stay in a constant state (e.g. a switch on a network needs to stay on and event management tools confirm this by monitoring responses to 'pings')
Some CIs will be included because their status needs to change frequently and event management can be used to automate this and update the configuration management system (CMS) (e.g. the updating of a file server)
Environmental conditions (e.g. fire and smoke detection)
Software license monitoring for usage to ensure optimum/legal license utilization and allocation
Security (e.g. intrusion detection)
Normal activity (e.g. tracking the use of an application or the performance of a server).
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Request Fulfillment				
Purpose: Request fulfillment is the process responsible for managing the lifecycle of all service requests from the users.				
Objective: The objectives of the request fulfillment process are to:				
Maintain user and customer satisfaction through efficient and professional handling of all service requests				
Provide a channel for users to request and receive standard services for which a predefined authorization and qualification process exists				
Provide information to users and customers about the availability of services and the procedure for obtaining them				
 Source and deliver the components of requested standard services (e.g. licenses and software media) 				
Assist with general information, complaints or comments.				
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The process needed to fulfill a request will vary depending upon exactly what is being requested, but can usually be broken down into a set of activities that have to be performed. For each request, these activities should be documented into a request model and stored in the SKMS.

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Some organizations will be comfortable letting the service requests be handled through their incident management process (and tools) – with service requests being handled as a particular type of 'incident' (using a high-level categorization system to identify those 'incidents' that are in fact service requests). Note, however, that there is a significant difference here – an incident is usually an unplanned event, whereas a service request is usually something that can and should be planned



Acces while mana	ss management is the process of granting authorize preventing access to non-authorized users. It has a agement or identity management in different organiz	ed users the right to use a service, also been referred to as rights ations.
Purp use a define	ose: The purpose of access management is to prov a service or group of services. It is therefore the ex ed in information security management.	ride the right for users to be able to ecution of policies and actions
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I he o	bjectives of the access management process are to:	
	 Manage access to services based on policies and actions security management 	s defined in information
>	 Efficiently respond to requests for granting access to servights or restricting access, ensuring that the rights being properly granted 	vices, changing access provided or changed are
2	 Oversee access to services and ensure rights being prov used. 	ided are not improperly
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Access Management

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Scope

- Access management is effectively the execution of the policies in information security management, in that it enables the organization to manage the confidentiality, availability and integrity of the organization's data and intellectual property.
- Access management ensures that users are given the right to use a service, but it does not ensure that this access is available at all agreed times - this is provided by availability management.
- Access management is a process that is executed by all technical and application management functions and is usually not a separate function. However, there is likely to be a single control point of coordination, usually in IT operations management or on the service desk.
- > Access management can be initiated by a service request.

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A function is a logical concept that refers to the people and automated measures that execute a defined process, an activity or a combination of processes or activities. In larger organizations a function may be broken up and performed by several departments, teams and groups, or it may be embodied within a single organizational unit.



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Service Desk Function				
The service desk is a vitally important part of an IT organization and should be the single point of contact for IT users on a day-by-day basis.				
Service Desk not only handles incidents, escalates incidents to problem management staff, manages service requests and answers questions.				
Service Desk may also provide an interface for other activities such as customer change requests, maintenance contracts, software licenses, SLM, service asset and configuration management, availability management, financial management for IT services, and IT service continuity management.				
A good service desk can often compensate for deficiencies elsewhere in the IT organization, but a poor service desk (or the lack of a service desk) can give a poor impression of an otherwise very effective IT organization				
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The exact nature, type, size and location of a service desk will vary, depending upon the type of business, number of users, geography, complexity of calls, scope of services and many other factors. In alignment to customer and business requirements, the IT organization's senior managers should decide the exact nature of its required service desk (and whether it should be internal or outsourced to a third party) as part of its overall ITSM strategy (see ITIL Service Strategy).

Subsequent planning must then be done to prepare for and then implement the appropriate service desk function (either when implementing a new function, or more likely these days when making necessary amendments to an existing function – see ITIL Service Design and ITIL Service Transition).



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Service Desk - Objectives

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The primary aim of the service desk is to provide a single point of contact between the services being provided and the users. A typical service desk manages incidents and service requests, and also handles communication with the users.

Specific responsibilities will include:

- Logging all relevant incident/service request details, allocating categorization and prioritization codes
- Providing first-line investigation and diagnosis
- > Resolving incidents/service requests when first contacted whenever possible
- Escalating incidents/service requests that they cannot resolve within agreed timescales
- Keeping users informed of progress
- > Closing all resolved incidents, requests and other calls
- > Conducting customer/user satisfaction callbacks/ surveys as agreed

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Service desk staff execute the incident management and request fulfilment processes to restore the normalstate service operation to the users as quickly as possible. In this context 'restoration of service' is meant in the widest possible sense. While this could involve fixing a technical fault, it could equally involve fulfilling a service request or answering a query – anything that is needed to allow the users to return to working satisfactorily.



Serv	vice Desk - Objectives	
)	 Communication with users – keeping them informed of incident progress, notifying them of impending changes or agreed outages etc. Updating the CMS under the direction and approval of service asset and 	
	configuration management if so agreed.	
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Service desk staff execute the incident management and request fulfilment processes to restore the normalstate service operation to the users as quickly as possible. In this context 'restoration of service' is meant in the widest possible sense. While this could involve fixing a technical fault, it could equally involve fulfilling a service request or answering a query – anything that is needed to allow the users to return to working satisfactorily.



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Service Desk Organizational Structure

Local Service Desk: Service Desk is co-located within or physically close to the user community it serves. This often aids communication and gives a clearly visible presence, which some users like, but can often be inefficient and expensive to resource as local staff are tied up waiting to deal with incidents when the volume and arrival rate of calls may not justify this.

There may, however, be some valid reasons for maintaining a local desk, even where call volumes alone do not justify this. Reasons might include:

- Language and cultural or political differences
- > Different time zones
- Specialized groups of users
- The existence of customized or specialized services that require specialist knowledge
- VIP/criticality status of users.

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Centralized Service Desk

It is possible to reduce the number of service desks by merging them into a single location (or into a smaller number of locations) by drawing the staff into one or more centralized Service Desk structures. This can be more efficient and cost-effective, allowing fewer overall staff to deal with a higher volume of calls, and can also lead to higher skill levels through greater familiarization from more frequent occurrence of events

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Specialized Service Desk Groups

Specialized service desk groups For some organizations it might be beneficial to create specialist groups within the overall service desk structure, so that incidents relating to a particular IT service can be routed directly (normally via telephony selection or a web-based interface) to the specialist group. This can allow faster resolution of these incidents, through greater familiarity and specialist training.

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Technical Management Function

Technical management refers to the groups, departments or teams that provide technical expertise and overall management of the IT infrastructure.

Technical Management – Role

Technical management plays a dual role:

It is the custodian of technical knowledge and expertise related to managing the IT infrastructure. In this role, technical management ensures that the knowledge required to design, test, manage and improve IT services is identified, developed and refined.

It provides the actual resources to support the Functions. In this role technical management ensures that resources are effectively trained and deployed to design, build, transition, operate and improve the technology required to deliver and support IT services.

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By performing these two roles, technical management is able to ensure that the organization has access to the right type and level of human resources to manage technology and thus to meet business objectives. Defining the requirements for these roles starts in service strategy and is expanded in service design, validated in service transition and refined in CSI

Part of this role is also to ensure a balance between the skill level, utilization and cost of these resources.

An additional but very important role played by technical management is to provide guidance to IT operations about how best to carry out the ongoing operational management of technology.









Application Management			
Application management activities are performed in all applications, whether purchased or developed in-house. One of the key decisions that they contribute to is the decision of whether to buy an application or build it.			
Once that decision is made, application management will have several roles:			
It is the custodian of technical knowledge and expertise related to managing applications. In this role application management, working together with technical management, ensures that the knowledge required to design, test, manage and improve IT services is identified, developed and refined.			
It provides the actual resources to support the Functions. In this role, application management ensures that resources are effectively trained and deployed to design, build, transition, operate and improve the technology required to deliver and support IT services.			
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By performing these roles, application management is able to ensure that the organization has access to the right type and level of human resources to manage applications and thus to meet business objectives. This starts in service strategy and is expanded in service design, tested in service transition and refined in CSI.

A key objective is to ensure a balance between the skill level and the cost of these resources.

Application management also performs other specific roles:

Providing guidance to IT operations about how best to carry out the ongoing operational management of applications. This role is partly carried out during the service design process, but it is also a part of everyday communication with IT operations management as they seek to achieve stability and optimum performance.

The integration of the application management lifecycle into the service lifecycle.



Application Management - Objectives

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IT Operations Management Role

The role of IT operations management is to execute the ongoing activities and procedures required to manage and maintain the IT infrastructure so as to deliver and support IT services at the agreed levels.

As with many ITSM processes and functions, IT operations management plays a dual role:

- IT operations management is responsible for executing the activities and performance standards defined during service design and tested during service transition. In this sense the role of IT operations is primarily to maintain the status quo.
- At the same time, IT operations is part of the process of adding value to the different lines of business and to support the value network. The ability of the business to meet its objectives and to remain competitive depends on the output and reliability of the day-to-day operation of IT. As business demand and requirements change, IT operations management must be able to keep pace with them, often challenging the status quo.

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Operations Management generally has the following characteristics:

- There is work to ensure that a device, system or process is actually running or working (as opposed to strategy or planning)
- This is where plans are turned into actions
- The focus is on daily or shorter-term activities, although it should be noted that these activities will generally be performed and repeated over a relatively long period (as opposed to one-off project type activities)
- These activities are executed by specialized technical staff, who often have to undergo technical training to learn how to perform each activity
- There is a focus on building repeatable, consistent actions that if repeated frequently enough at the right level of quality will ensure the success of the operation
- This is where the actual value of the organization is delivered and measured
- There is a dependency on investment in equipment or human resources or both
- The value generated, must exceed the cost of the investment and all other organizational overheads (such as management and marketing costs) if the business is to succeed.



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IT Operations Management

IT operations control IT operations control oversees the execution and monitoring of the operational activities and events in the IT infrastructure. This can be done with the help of an operations bridge or network operations centre.

Facility Management Facilities management refers to the management of the physical IT environment, typically a data centre or computer rooms and recovery sites together with all the power and cooling equipment. Facilities management also includes the coordination of large-scale consolidation projects



IT operations control also performs the following specific tasks:

- Console management/operations bridge, which refers to defining central observation and monitoring capability and then using those consoles to exercise event management, monitoring and control activities
- · Job scheduling, or the management of routine batch jobs or scripts
- Backup and restore on behalf of all technical and application management teams and departments and
 often on behalf of users
- Print and output management for the collation and distribution of all centralized printing or electronic output
- Performance of maintenance activities on behalf of technical or application management teams or departments.



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To align IT services with changing business needs by identifying and implementing improvements to IT services that support business processes.		
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CSI - Objectives

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- Review, analyze and make recommendations on improvement opportunities in each lifecycle phase
- Review and analyze Service Level Achievement results
- Improve IT Service quality and improve the efficiency and effectiveness of enabling ITSM processes
- Improve cost effectiveness of delivering IT Services without affecting customer satisfaction adversely
- Ensure applicable quality management methods are used to support continual improvement activities
- Ensure that processes have clearly defined objectives and measurements that lead to actionable improvements
- Understand what to measure, why it is being measured and what the successful outcome should be

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CSI - Scope

- The overall health of ITSM as a discipline
- The continual alignment of the service portfolio with the current and future business needs
- The maturity and capability of the organization, management, processes and people utilized by the services
- Continual improvement of all aspects of the IT service and the service assets that support them.

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To implement CSI successfully it is important to understand the different activities that need to be applied. The following activities support CSI:

- Reviewing management information and trends to ensure that services are meeting agreed service levels
- Reviewing management information and trends to ensure that the output of the enabling processes are achieving the desired results
- Periodically conducting maturity assessments against the process activities and associated roles to demonstrate areas of improvement or, conversely, areas of concern
- · Periodically conducting internal audits verifying employee and process compliance
- · Reviewing existing deliverables for appropriateness
- · Periodically proposing recommendations for improvement opportunities
- · Periodically conducting customer satisfaction surveys
- Reviewing business trends and changed priorities, and keeping abreast of business projections
- · Conducting external and internal service reviews to identify CSI opportunities
- · Measuring and identifying the value created by CSI improvements.





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W. Edwards Deming is best known for his management philosophy leading to higher quality, increased productivity, and a more competitive position. As part of this philosophy he formulated 14 points of attention for managers. Some of them are more appropriate to service management than others. For quality improvement he proposed the Deming Cycle or Circle. This cycle is particularly applicable in CSI

The PDCA cycle is critical at two points in CSI: implementation of CSI, and for the application of CSI to services and service management processes. At implementation, all four stages of the PDCA cycle are used. With ongoing improvement, CSI draws on the check and act stages to monitor, measure, review and implement initiatives.

The seven-step improvement process can be viewed as an example of an implementation of the PDCA cycle, with each of the steps falling within one of the phases of the cycle: Plan, Do, Check, Act.

The cycle is underpinned by a process-led approach to management where defined processes are in place, the activities are measured for compliance to expected values and outputs are audited to validate and improve the process.





CSI approach

Figure above shows an overall approach to continual service improvement (CSI) and illustrates a continual cycle of improvement. This approach to improvement can be summarized as follows::

- What is the vision: Embrace the vision by understanding the high-level business objectives. The vision should align the business and IT strategies.
- Where are we now: Assess the current situation to obtain an accurate, unbiased snapshot of where the
 organization is right now. This baseline assessment is an analysis of the current position in terms of the
 business, organization, people, process and technology.
- Where do we want to be: Understand and agree on the priorities for improvement based on a deeper development of the principles defined in the vision. The full vision may be years away but this step provides specific goals and a manageable timeframe.
- How do we get there: Detail the CSI plan to achieve higher quality service provision by implementing ITSM processes
- Did we get there: Verify that measurements and metrics are in place to ensure that milestones were achieved, processes compliance is high, and business objectives and priorities were met by the level of service.
- How do we keep the momentum going: Finally, the process should ensure that the momentum for quality improvement is maintained by assuring that changes become embedded in the organization.




In general, a metric is a scale of measurement defined in terms of a standard, i.e. a well-defined unit. Metrics are a system of parameters or ways of quantitative assessment of a process that is to be measured. Metrics define what is to be measured. Metrics are usually specialized by the subject area, in which case they are valid only within a certain domain and cannot be directly benchmarked or interpreted outside it. Generic metrics, however, can be aggregated across subject areas or business units of an enterprise.

Metrics are used in several business models including CMMI, COBIT and Six Sigma. These measurements or metrics can be used to track trends, productivity, resources and much more. Typically, the metrics tracked are KPIs.







Seven Step Improvement Process

Purpose: The purpose of the seven-step improvement process is to define and manage the steps needed to identify, define, gather, process, analyze, present and implement improvements.

Objectives: The objectives of the seven-step improvement process are to:

- > Identify opportunities for improving services, processes, tools etc.
- Reduce the cost of providing services and ensuring that IT services enable the required business outcomes to be achieved.
- A clear objective will be cost reduction, but this is not the only criterion. If service delivery or quality reduces as a result the overall impact may be neutral or even negative.
- Identify what needs to be measured, analyzed and reported to establish improvement opportunities.
- Continually review service achievements to ensure they remain matched to business requirements; continually align and re-align service provision with outcome requirements.
- Understand what to measure, why it is being measured and carefully define the successful outcome.

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It is important to note that improvements in quality should not be implemented if there is a cost associated with the improvement and if this cost has not been justified. Every potential improvement opportunity will have to have a business case justification to show that the business will have an overall benefit.



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Seven Step Improvement Process - Scope

The seven-step improvement process includes analysis of the performance and capabilities of services, processes throughout the lifecycle, partners and technology.

It includes the continual alignment of the portfolio of IT services with the current and future business needs as well as the maturity of the enabling IT processes for each service.

It also includes making best use of the technology that the organization has and looks to exploit new technology as it becomes available where there is a business case for doing so.

Also within the scope are the organizational structure, the capabilities of the personnel, and asking whether people are working in appropriate functions and roles, and if they have the required skills.







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4	Automation is considered to improve the utility and warranty of services. It may offer advantages in many areas of opportunity, including the following:
4	Agility: The capacity of automated resources can be more easily adjusted in response to variations in demand volumes.
1	24X7: Automated resources can handle capacity with fewer restrictions on time of access
4	Metrics driven: Automated systems present a good basis for measuring and improving service processes by holding constant the factor of human resources
A	Competence: Many optimization problems such as scheduling, routing and allocation of resources require computing power that is beyond the capacity of human agents
A	Knowledge Management: Automation is a means for capturing the knowledge required for a service process. Codified knowledge is relatively easy to distribute throughout the organization in a consistent and secure manner
A	Lower variance: The variation in the performance of individuals with time, workload, motivation and nature of the task at hand can be a disadvantage in many situations.

The following are some of the areas where service management can benefit from automation:

- Design and modelling
- Service catalogue
- Pattern recognition and analysis
- Classification, prioritization and routeing
- Detection and monitoring
- Optimization.



≻ T	he tools and techniques can help design	
	 Hardware, Software, Environment, Process, D 	Data
≻ т	he use of tools and techniques helps in	
	 Speeding up the design process 	
	 Ensuring that standards and conventions are f 	followed
	 Offering prototyping, modelling, simulation an examined 	d 'What if?' scenarios to be
	 Enabling interfaces and dependencies to check 	cked and correlated
	 Validating designs before they are developed a 	and implemented











>	In self-service situations, reduce the surface area of the contact users have with the underlying systems and processes.
~	Needless interactions with the internals of the system can introduce avoidable variation because of mental overload and slower learning curves.
>	Simplify the interfaces so that users see the attributes needed to present demand and extract utility.
•	Do not be in a hurry to automate tasks and interactions that are neither simple nor routine in terms of inputs, resources and outcomes.
•	Recurring patterns are more suited for automation than less consistent and infrequent activities.





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ITIL Foundation Examination

Sample Paper C

Question Booklet

Multiple Choice

Exam Duration: 60 minutes

Instructions

- 1. You should attempt all 40 questions. Each question is worth one mark.
- 2. Mark your answers on the answer sheet provided. Use a pencil (NOT ink pen).
- 3. There is only one correct answer per question.
- 4. You have 60 minutes to complete this paper.
- 5. You must achieve 26 or more out of a possible 40 marks (65%) to pass this examination.

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- 1. Which is NOT a source of best practice?
 - a) Standards
 - b) Technology
 - c) Academic research
 - d) Internal experience
- 2. Which three are the characteristics of ITIL guidance that help to make it successful?
 - a) Prescriptive, best practice and solution specific
 - b) Publicly available, prescriptive and best practice
 - c) Vendor neutral, non-prescriptive and best practice
 - d) Publicly available, solution specific and vendor neutral
- 3. What is the ITIL term for customers of an IT service provider who purchase services as agreed in a legal contract?
 - a) Strategic customers
 - b) External customers
 - c) Valued customers
 - d) Internal customers

- 4. Which is NOT defined as part of every process?
 - a) Roles
 - b) Inputs and outputs
 - c) Functions
 - d) Metrics
- 5. In which areas would ITIL complementary guidance provide assistance?
 - 1. Adapting best practice for specific industry sectors
 - 2. Creating service application interfaces
 - 3. Specialized practices for IT recruitment
 - 4. Integrating ITIL with other operating models
 - a) 1 and 2
 - b) 2 and 3
 - c) 3 and 4
 - d) 1 and 4
- 6. Which is an objective of service transition?
 - a) To negotiate service levels for new services
 - b) To ensure that service changes create the expected business value
 - c) To reduce the impact of business critical service outages on key services
 - d) To plan and manage entries in the service catalogue

- 7. Which lifecycle stage ensures that the impact of service outages is minimized on a day-to-day basis?
 - a) Service design
 - b) Service operation
 - c) Continual service improvement
 - d) Service transition
- 8. Which is the BEST description of a service catalogue?
 - a) A document used by IT staff to identify activities that must be performed
 - b) A list of all service level agreements (SLAs)
 - c) A list of all business requirements that have not yet become services
 - d) The part of the service portfolio that is visible to customers
- 9. Which of the following is concerned with policy and direction?
 - a) Capacity management
 - b) Governance
 - c) Service design
 - d) Service level management

- 10. Which is an example of an operational level agreement (OLA)?
 - a) A document that outlines agreements between service providers in the same organization
 - b) A document that outlines the responsibilities of both the IT service provider and the customer
 - c) A document that describes to a customer how services will be operated on a day-to-day basis
 - d) A document that describes business services and their service level targets to operational staff
- 11. A known error record has been created after completing diagnosis of a problem but before finding a workaround.

Is this a valid approach?

- a) Yes: a known error record can be created at any time it is prudent to do so
- b) No: a known error record should be created before the problem is logged
- c) No: a known error record is created when the original incident is raised
- d) No: a known error record should be created with the next release of the service
- 12. Which is used to communicate a high level description of a major change that involved significant cost and risk to the organization?
 - a) Change proposal
 - b) Change policy
 - c) Service request
 - d) Risk register

- 13. Which person or group is responsible for agreeing service targets with the service provider?
 - a) The user
 - b) The customer
 - c) The supplier
 - d) The service desk staff
- 14. Which of the following is TRUE regarding value?
 - a) Value is defined by the customer
 - b) Value is defined by the cost of the service
 - c) Value is determined by the features offered to the customer
 - d) Value is determined in financial terms only
- 15. Software and technology are examples of which of the four Ps?
 - a) Processes
 - b) Performance
 - c) Products
 - d) Partners

- 16. What is the MAIN reason for a service provider to understand the five aspects of service design?
 - a) To prevent security breaches in mission critical services
 - b) To ensure a holistic, results-driven approach
 - c) To allow service design to cut costs
 - d) To prevent breaches of service level agreements (SLAs)

17. Which is the CORRECT set of steps in the Continual Service Improvement (CSI) approach?

- a) Devise a strategy; Design the solution; Transition into production; Operate the solution; Continually improve
- b) 'Where do we want to be?'; 'How do we get there?'; 'Who plans the improvement?'; 'How do we know we arrived?'; 'How do we keep the momentum going?'
- c) Identify the required business outcomes; Plan how to achieve the outcomes; Implement the plan; Check the plan has been properly implemented; Improve the solution
- d) 'What is the vision?'; 'Where are we now?'; 'Where do we want to be?'; 'How do we get there?'; 'Did we get there?'; 'How do we keep the momentum going?'
- 18. Which three types of metric support Continual Service Improvement (CSI) activities?
 - a) Technology metrics, service desk metrics and Key Performance Indicator (KPI) metrics
 - b) Process metrics, software metrics and financial metrics
 - c) Technology metrics, process metrics and service metrics
 - d) Service metrics, technology metrics and Key Performance Indicator (KPI) metrics

- 19. Which part of Financial Management for IT services deals with predicting and controlling income and expenditure within the organization?
 - a) Accounting
 - b) Budgeting
 - c) Cost models
 - d) Charging

20. What is the PRIMARY process for strategic communication with the service provider's customers?

- a) Service catalogue management
- b) Service portfolio management
- c) Service desk
- d) Business relationship management
- 21. Which of these recommendations are best practice for service level agreements?
 - 1. Include legal terminology in service level agreements (SLAs)
 - 2. Ensure all the targets in an SLA are measurable.
 - 3. Ensure the SLA is signed by both customer and provider
 - 4. Include the service hours and cost of delivering the service
 - a) 1 and 2
 - b) 2 and 3
 - c) 3 and 4
 - d) 1 and 4

22. Which is the BEST description of a service-based service level agreement (SLA)?

- a) An agreement with an individual customer group, covering all the services that they use
- b) An agreement that covers one service for a single customer
- c) An agreement that covers service-specific issues in a multi-level SLA structure
- d) An agreement that covers one service for all customers of that service

23. Which is NOT a responsibility of service catalogue management?

- a) Ensuring that information about live IT services is accurate
- b) Ensuring that service level agreements are maintained
- c) Ensuring that information in the service catalogue is consistent with the service portfolio
- d) Ensuring that all operational services are recorded in the service catalogue

24. Which is NOT an objective of supplier management?

- a) Maintaining the supplier policy
- b) Supplier categorization and risk assessment
- c) Maintaining the service knowledge management system
- d) Identifying opportunities for the continual service improvement register

- 25. Which process has the objective: "To ensure all service models conform to strategic, architectural, governance, and other corporate requirements"?
 - a) Service portfolio management
 - b) Design coordination
 - c) Service level management
 - d) Change management
- 26. Which statement about the emergency change advisory board (ECAB) is CORRECT?
 - a) The ECAB considers every high priority request for change
 - b) The review of completed emergency changes is one of the duties of the ECAB
 - c) The ECAB will be used for emergency changes where there may not be time to call a full CAB
 - d) The ECAB will be used when a full CAB has a large backlog of changes
- 27. Who normally chairs a change advisory board (CAB)?
 - a) Change manager
 - b) Service owner
 - c) Change initiator
 - d) Business relationship manager

- 28. What is the second phase in release and deployment management?
 - a) Review and close
 - b) Authorize changes
 - c) Release build and test
 - d) Release and deployment planning
- 29. Which process has the objective: "to improve the quality of management decision making by ensuring that reliable and secure information is available throughout the lifecycle"?
 - a) Knowledge management
 - b) Availability management
 - c) Service asset and configuration management
 - d) Change management
- 30. Which process helps to ensure that new or changed services are established in supported environments within the predicted cost, quality and time estimates?
 - a) Financial management for IT Services
 - b) Capacity management
 - c) Transition planning and support
 - d) Change management

- 31. Which should be done when closing an incident?
 - 1. Check the incident categorization and correct it if necessary
 - 2. Check that the user is satisfied with the outcome
 - 3. Record a known error record with the resolution
 - 4. Perform an incident review for lessons learned
 - a) 1 and 2
 - b) 2 and 3
 - c) 3 and 4
 - d) 1 and 4
- 32. Which BEST describes hierarchic escalation?
 - a) Notifying more senior levels of management about an incident
 - b) Passing an incident to people with a greater level of technical skill
 - c) Using more senior specialists than necessary to resolve an incident to maintain customer satisfaction
 - d) Failing to meet the incident resolution times specified in a service level agreement
- 33. A significant, unresolved problem is likely to cause major business disruption. Where is this MOST LIKELY to be escalated to?
 - a) IT service continuity management
 - b) Availability management
 - c) Incident management
 - d) Change management

- 34. Which process will regularly analyze incident data to identify discernable trends?
 - a) Service level management
 - b) Problem management
 - c) Change management
 - d) Event management
- 35. Which is the BEST description of a service request?
 - a) A request from a user for information, advice or for a standard change
 - b) Anything that the customer wants and is prepared to pay for
 - c) Any request or demand that is entered by a user via a self-help web-based interface
 - d) Any request for change (RFC) that is low-risk and which can be approved by the change manager without a change advisory board (CAB) meeting
- 36. Which service desk organizational structure is NOT described in 'Service Operation'?
 - a) Local service desk
 - b) IT help desk
 - c) Virtual service desk
 - d) Follow the sun

37. Which function or process would provide staff to monitor events in an operations bridge?

- a) Technical management
- b) IT operations management
- c) Request fulfilment
- d) Applications management
- 38. What is a process owner NOT responsible for?
 - a) Defining the process strategy
 - b) Communication of process information or changes to ensure awareness
 - c) Developing IT plans that meet and continue to meet the IT requirements of the business
 - d) Identifying improvement opportunities for inclusion in the CSI register

39. What is the role of a person if they are categorized as "I" in a RACI matrix?

- a) They are accountable for the outcome of the activity
- b) They must perform an activity
- c) They must be kept up to date on the progress of an activity
- d) They manage an activity

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- 40. Which of these can be introduced to provide; improved detection and monitoring, pattern recognition analysis and service optimization?
 - a) Service automation
 - b) The DIKW structure
 - c) Demand management
 - d) Standard changes

END OF EXAMINATION



ITIL Foundation Examination

Sample Paper D

Question Booklet

Multiple Choice

Exam Duration: 60 minutes

Instructions

- 1. You should attempt all 40 questions. Each question is worth one mark.
- 2. Mark your answers on the answer sheet provided. Use a pencil (NOT ink pen).
- 3. There is only one correct answer per question.
- 4. You have 60 minutes to complete this paper.
- 5. You must achieve 26 or more out of a possible 40 marks (65%) to pass this examination.

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- 1. Which of the following examples is a source of best practice?
 - a) A hardware supplier
 - b) A service management tool
 - c) ISO / IEC 20000
 - d) A consultancy organization
- 2. Which is the CORRECT explanation of how a service facilitates an outcome?
 - a) By enhancing the performance of associated tasks and reducing the effect of constraints
 - b) By comparing service value with service cost to ensure there is an equal ratio
 - c) By ensuring data is translated directly into wisdom allowing better business decisions to be made
 - d) By allowing the achievement of contractual obligations and avoiding financial penalties
- 3. What ITIL term is used for customers of IT services who do NOT work in the same organization as the service provider?
 - a) Strategic customers
 - b) External customers
 - c) Valued customers
 - d) Internal customers

- 4. What should be defined for every process?
 - a) The process owner, process policy and set of process activities
 - b) The service owner, service level agreement and set of process procedures
 - c) The policy owner, operational level agreement and set of process steps
 - d) The service manager, service contract and set of work instructions
- 5. All of the stages of the ITIL lifecycle have a role to play in ensuring the delivery of high quality IT services at optimum cost.

Which of these has the BEST opportunity to prevent difficulties as early as possible and minimize the cost of any remedial work?

- a) Service transition
- b) Continual service improvement (CSI)
- c) Service design
- d) Service operation
- 6. Which is NOT part of the service transition stage of the service lifecycle?
 - a) Successfully deploying service releases into supported environments
 - b) Designing and developing capabilities for service management
 - c) Ensuring that service changes create the expected business value
 - d) Planning the resources required to manage a release

- 7. Which is an objective of service operation?
 - a) To coordinate and carry out the activities and processes required to deliver services to the business and manage them at agreed levels
 - b) To successfully release services into a live or supported environment
 - c) To identify opportunities to provide services and exploit them
 - d) To define the capability required to deliver the IT strategy
- 8. Which is the BEST description of a business case?
 - a) A decision support and planning tool that details the likely consequences of a business action
 - b) A document that details the terms of a service for particular customers in the same company
 - c) A complaint by the business about a missed service level
 - d) The terms and conditions in an IT outsource contract
- 9. Which of these statements about service asset and configuration management is CORRECT?
 - 1. A configuration item (CI) can be a component part of one or more other CIs
 - 2. How an organization groups components into configuration items will depend on the level of control they wish to exert
 - 3. A single configuration management database (CMDB) is the objective for an organization
 - 4. All CMDB audits should be conducted by external auditors using a CMDB standard
 - a) 1 and 2
 - b) 2 and 3
 - c) 3 and 4
 - d) 1 and 4

- 10. Which BEST defines availability?
 - a) How quickly a service or component can be restored after failure
 - b) The ability of a third party supplier to meet the terms of its contract
 - c) The ability of a service desk to restore service to configuration items (CIs) and infrastructure components
 - d) The ability of a service, component or CI to perform its agreed function when required
- 11. The definitive media library is the responsibility of:
 - a) Facilities management
 - b) Access management
 - c) Request fulfilment
 - d) Service asset and configuration management
- 12. 'A cause of one or more incidents' is the ITIL definition of which of these terms?
 - a) A known error
 - b) A workaround
 - c) A problem
 - d) A root cause

- 13. Where would all the possible service improvement opportunities be recorded?
 - a) CSI register
 - b) Known error database
 - c) Capacity management information system
 - d) Configuration management database
- 14. Which is NOT a defined area of value?
 - a) Customer preferences
 - b) Business policies
 - c) Customer perceptions
 - d) Business outcomes
- 15. An Internal IT department would be considered which one of the 'four Ps' of service design?
 - a) Provider
 - b) People
 - c) Partner
 - d) Performer

- 16. Which do technology metrics measure?
 - a) Components
 - b) Processes
 - c) The end-to-end service
 - d) Customer satisfaction
- 17. What is the next step in the continual service improvement (CSI) approach:
 - 1. What is the vision?
 - 2. Where are we now?
 - 3. Where do we want to be?
 - 4. How do we get there?
 - 5. Did we get there?
 - 6. ?
 - a) What is the return on investment (ROI)?
 - b) How much did it cost?
 - c) How do we keep the momentum going?
 - d) What is the value on investment (VOI)?
- 18. Which do service metrics measure?
 - a) Functions
 - b) Maturity and cost
 - c) The end-to-end service
 - d) Infrastructure availability

- 19. In which document would you expect to see an overview of actual service achievements against targets?
 - a) Operational level agreement (OLA)
 - b) Capacity plan
 - c) Service level agreement (SLA)
 - d) SLA monitoring (SLAM) chart
- 20. Where should a customer's initial service targets be recorded before the service level agreement (SLA) is produced?
 - a) In an operational level agreement (OLA)
 - b) In a list of service level requirements (SLR)
 - c) In the service catalogue
 - d) In the configuration management database (CMDB)
- 21. The remediation plan should be evaluated at what point in the change lifecycle?
 - a) Before the change is approved
 - b) Immediately after the change has failed and needs to be backed out
 - c) After implementation but before the post implementation review
 - d) After the post implementation review has identified a problem with the change

- 22. Which of the following lists shows change types defined in ITIL?
 - a) Strategic, emergency and normal
 - b) Strategic, urgent and emergency
 - c) Standard, urgent and normal
 - d) Standard, emergency and normal
- 23. Which is the BEST reason for categorizing incidents?
 - a) To identify trends for use in problem management and other IT service management activities
 - b) To ensure service levels are met and breaches of agreements are avoided
 - c) To enable the incident management database to be partitioned for greater efficiency
 - d) To identify whether the user is entitled to log an incident for this particular service
- 24. What should be documented in an incident model?
 - 1. Chronological order of steps to resolve the incident
 - 2. Details of the service level agreement (SLA) targets and reliability
 - 3. Details of agreed service continuity requirements
 - 4. Escalation procedures for who should be contacted and when
 - a) 1 and 2
 - b) 2 and 3
 - c) 3 and 4
 - d) 1 and 4

- 25. Which process is responsible for eliminating recurring incidents and minimizing the impact of incidents that cannot be prevented?
 - a) Service level management
 - b) Problem management
 - c) Change management
 - d) Event management
- 26. With which process is problem management likely to share categorization and impact coding systems?
 - a) Incident management
 - b) Service asset and configuration management
 - c) Capacity management
 - d) IT service continuity management
- 27. Which process includes 'facilitating good stewardship of service and customer assets' as an objective?
 - a) Service level management
 - b) Financial management for IT services
 - c) Change evaluation
 - d) Service catalogue management
- 28. Which process is responsible for recording the current details, status, interfaces and dependencies of all live services and services that are about to be implemented?
 - a) Service level management
 - b) Service catalogue management
 - c) Demand management
 - d) Service transition
- 29. Which process includes business, service and component sub-processes?
 - a) Capacity management
 - b) Incident management
 - c) Service level management
 - d) Financial management
- 30. Which service design process would ensure that utility and warranty requirements are properly addressed in all service designs?
 - a) Availability management
 - b) Capacity management
 - c) Design coordination
 - d) Release and deployment management

- 31. Which process is responsible for ensuring that appropriate testing takes place?
 - a) Knowledge management
 - b) Release and deployment management
 - c) Service asset and configuration management
 - d) Service level management
- 32. Which term describes the experiences, ideas, insights and values of individuals?
 - a) Data
 - b) Information
 - c) Knowledge
 - d) Governance
- 33. What is the purpose of transition planning and support?
 - a) Provide overall planning for service transitions and coordinate the resources they require
 - b) Ensure that all service transitions are properly authorized
 - c) Provide the resources to allow all infrastructure elements of a service transition to be recorded and tracked
 - d) To define testing scripts to ensure service transitions are unlikely to ever fail

- 34. Which would NOT involve event management?
 - a) Intrusion detection
 - b) Recording and monitoring environmental conditions in the data centre
 - c) Recording service desk staff absence
 - d) Monitoring the status of configuration items
- 35. Which process is responsible for dealing with complaints, comments, and general enquiries from users?
 - a) Service level management
 - b) Service portfolio management
 - c) Request fulfilment
 - d) Demand management

36. Which is the BEST description of a centralized service desk?

- a) The desk is co-located within or physically close to the user community it serves
- b) The desk uses technology and other support tools to give the impression that multiple desk locations are in one place
- c) The desk provides 24 hour global support
- d) There is a single desk in one location serving the whole organization

- 37. Which is an objective of application management?
 - a) Defining where the vendor of an application should be located
 - b) Ensuring that the required functionality is available to achieve the required business outcome
 - c) Evaluating the patterns of business activity by types of users
 - d) Agreeing the service levels for the service supported by the application
- 38. Which statement about a service owner is INCORRECT?
 - a) Carries out the day-to-day monitoring and operation of the service they own
 - b) Contributes to continual improvement affecting the service they own
 - c) Is a stakeholder in all of the IT processes which support the service they own
 - d) Is accountable for a specific service within an organization
- 39. Which rule should be followed when defining a RACI authority matrix?
 - a) More than one person is accountable
 - b) At least one person is consulted
 - c) Only one person is accountable
 - d) Only one person is responsible

40. Which does NOT benefit from service automation?

- a) Monitoring
- b) Wisdom
- c) Pattern recognition
- d) Prioritization

END OF EXAMINATION

"We would love to hear your thoughts, suggestions and comments to help us improve"

Participant Name:	Workshop:
Organization:	Instructor:
Email:	Date:

Directions: Using the scale below (<u>1 being the least and 5 the most</u>), please rate us on different parameters.

	1				-
EVALUATION	1	2	3	4	5
Instructor					
• Instructor's knowledge of the subject					
Instructor's quality of presentation					
• Instructor's ability to answer questions					
 How likely are you to attend any related workshops by the same instructor? 					
Workshop Topic					
• How useful were the topics?					
• Fulfilment of objectives					
• Quality of case studies					
• How likely are you to refer this workshop to people you know?					
Others					
 How useful was the reference material? (if provided) 					
Overall satisfaction					

• What did you like the most about this program/what were the strengths of this program according to you?

• How can the workshop be improved to serve you better?

• Any other inputs/comments/suggestions

QAI

What are your other Areas of Interest?

Portfolio and Program Management Related Trainings

- Prince 2 Foundation and Practitioner
- Managing Successful Programmes (MSP)
- O PMP Contact

IT Service Management Related Trainings

- ITIL Foundation Certification
- ITIL Intermediate
- ITIL Managing Across Lifecycle
- O COBIT 5 Foundation

Business Process Improvement Related Trainings

- 🔘 Lean Six Sigma Green Belt
- 🔿 Lean Six Sigma Black Belt
- 🔿 Lean Six Sigma Master Black Belt
- HDI-SCM (0)
- Certified Lean Practitioner (0)

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