
Information Technology Infrastructure Library

The **Information Technology Infrastructure Library (ITIL)** is a set of practices for IT service management (ITSM) that focuses on aligning IT services with the needs of business. In its current form (known as ITIL 2011 edition), ITIL is published in a series of five core volumes, each of which covers an ITSM lifecycle stage. ITIL underpins ISO/IEC 20000 (previously BS15000), the International Service Management Standard for IT service management, although differences between the two frameworks do exist.

ITIL describes processes, procedures, tasks and checklists that are not organization-specific, used by an organization for establishing integration with the organization's strategy, delivering value and maintaining a minimum level of competency. It allows the organization to establish a baseline from which it can plan, implement and measure. It is used to demonstrate compliance and to measure improvement.

Since July 2013, ITIL has been owned by AXELOS Ltd, a joint venture between HM Cabinet Office and Capita Plc. Axelos licenses organisations to use the ITIL intellectual property, accredits licensed Examination Institutes, and manages updates to the framework.

History

Responding to growing dependence on IT, the UK Government's Central Computer and Telecommunications Agency (CCTA) in the 1980s developed a set of recommendations. It recognized that without standard practices, government agencies and private sector contracts had started independently creating their own IT management practices.

The **IT Infrastructure Library** originated as a collection of books, each covering a specific practice within IT service management. ITIL was built around a process-model based view of controlling and managing operations often credited to W. Edwards Deming and his plan-do-check-act (PDCA) cycle.

After the initial publication in 1989–96, the number of books quickly grew within ITIL v1 to more than 30 volumes.

In 2000/2001, to make ITIL more accessible (and affordable), ITIL v2 consolidated the publications into nine logical "sets" that grouped related process-guidelines to match different aspects of IT management, applications and services. The Service Management sets (Service Support and Service Delivery) were by far the most widely used, circulated and understood. ^{Wikipedia:Citation needed of ITIL v2 publications.}

- In April 2001 the CCTA was merged into the OGC, an office of the UK Treasury.^[1]
 - In 2006, the ITIL v2 glossary was published.
 - In May 2007, this organization issued version 3 of ITIL (also known as the ITIL Refresh Project) consisting of 26 processes and functions, now grouped into only 5 volumes, arranged around the concept of Service lifecycle structure. Version 3 is now known as ITIL 2007 Edition.
 - In 2009, the OGC officially announced that ITIL v2 certification would be withdrawn and launched a major consultation as per how to proceed.^[2]
 - In July 2011, the 2011 edition of ITIL was published, providing an update to the version published in 2007. The OGC is no longer listed as the owner of ITIL, following the consolidation of OGC into the Cabinet Office. The 2011 edition is owned by HM Government.
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Overview of ITIL 2007 edition

ITIL 2007 edition (previously known as version 3) is an extension of ITIL v2 and fully replaced it following the completion of the withdrawal period on 30 June 2011. ITIL 2007 provides a more holistic perspective on the full life cycle of services, covering the entire IT organization and all supporting components needed to deliver services to the customer, whereas v2 focused on specific activities directly related to service delivery and support. Most of the v2 activities remained untouched in 2007, but some significant changes in terminology were introduced in order to facilitate the expansion.

Changes and characteristics of the 2011 edition of ITIL

A summary of changes has been published by HM Government. In line with the 2007 edition, the 2011 edition consists of five core publications – *Service Strategy*, *Service Design*, *Service Transition*, *Service Operation* and *Continual Service Improvement*. ITIL 2011 is an update to the ITIL framework that addresses significant additional guidance with the definition of formal processes which were previously implied but not identified, as well as correction of errors and inconsistencies.

There are twenty-six processes listed in ITIL 2011 edition and described below that shows which core publication provides the main content for each process.

ITIL 2007 has five volumes, published in May 2007 and updated in July 2011 as ITIL 2011 for consistency:

The Five Volumes :

1. ITIL Service Strategy: *understands organizational objectives and customer needs.*
2. ITIL Service Design: *turns the service strategy into a plan for delivering the business objectives.*
3. ITIL Service Transition: *develops and improves capabilities for introducing new services into supported environments.*
4. ITIL Service Operation: *manages services in supported environments.*
5. ITIL Continual Service Improvement: *achieves services incremental and large-scale improvements.*

Due to the similarity between ITIL v3 of 2007 and ITIL 2011, no bridge examinations for ITIL v3 certification holders were created or made available for ITIL 2011 certification.

Service strategy

The center and origin point of the ITIL Service Lifecycle, the ITIL Service Strategy (SS) volume provides guidance on clarification and prioritization of service-provider investments in services. More generally, Service Strategy focuses on helping IT organizations improve and develop over the long term. In both cases, Service Strategy relies largely upon a market-driven approach. Key topics covered include service value definition, business-case development, service assets, market analysis and service provider types. List of covered processes:

1. IT service management
2. Service portfolio management
3. Financial management for IT services
4. Demand management
5. Business relationship management

For candidates in the ITIL Intermediate Capability stream, the Service Offerings and Agreements (SOA) Qualification course and exam are most closely aligned to the Service Strategy (SS) Qualification course and exam in the Lifecycle stream.

Financial management for IT services

Main article: Financial management for IT services

IT Financial Management comprises the discipline of ensuring that the IT infrastructure is obtained at the most effective price (which does not necessarily mean cheapest) and calculating the cost of providing IT services so that an organization can understand the costs of its IT services. These costs may then be recovered from the customer of the service. This is the 2nd component of service delivery process.

Service design

The Service Design (SD) volume provides good-practice guidance on the design of IT services, processes, and other aspects of the service management effort. Significantly, design within ITIL is understood to encompass all elements relevant to technology service delivery, rather than focusing solely on design of the technology itself. As such, service design addresses how a planned service solution interacts with the larger business and technical environments, service management systems required to support the service, processes which interact with the service, technology, and architecture required to support the service, and the supply chain required to support the planned service. Within ITIL, design work for an IT service is aggregated into a single service design package (SDP). Service design packages, along with other information about services, are managed within the service catalogues.

List of covered processes:

1. Design coordination (Introduced in ITIL 2011 Edition)
2. Service Catalogue management
3. Service level management
4. Availability management
5. Capacity Management
6. IT service continuity management
7. Information security management system
8. Supplier management

A model used to help define roles and responsibilities in Service Design is a RACI (Responsible, Accountable, Consulted and Informed) matrix.

Service Catalogue management

Service Catalogue management maintains and produces the Service Catalogue and ensures that it contains accurate details, dependencies and interfaces of all services made available to customers. Service Catalogue information includes:

- ordering and requesting processes
- prices
- deliverables
- contract points

Service-level management

Service-level management provides for continual identification, monitoring and review of the levels of IT services specified in the Service-level agreements (SLAs). Service-level management ensures that arrangements are in place with internal IT support-providers and external suppliers in the form of Operational Level Agreements (OLAs) and Underpinning Contracts (UCs), respectively. The process involves assessing the impact of change on service quality and SLAs. The service-level management process is in close relation with the operational processes to control their activities. The central role of Service-level management makes it the natural place for metrics to be established and

monitored against a benchmark.

Service-level management is the primary interface with the customer (as opposed to the user serviced by the service desk). Service-level management is responsible for:

- ensuring that the agreed IT services are delivered when and where they are supposed to be
- liaising with availability management, capacity management, incident management and problem management to ensure that the required levels and quality of service are achieved within the resources agreed with financial management
- ensuring that appropriate IT service continuity plans exist to support the business and its continuity requirements.

The service-level manager relies on the other areas of the service delivery process to provide the necessary support which ensures the agreed services are provided in a cost-effective, secure and efficient manner.

Availability management

Availability management targets allows organizations to sustain the IT service-availability to support the business at a justifiable cost. The high-level activities comprise of: realize availability requirements, compile availability plan, monitor availability, and monitor maintenance obligations.

Availability management addresses the ability of an IT component to perform at an agreed level over a period of time.

- **Reliability:** Ability of an IT component to perform at an agreed level at described conditions.
- **Maintainability:** The ability of an IT component to remain in, or be restored to an operational state.
- **Serviceability:** The ability for an external supplier to maintain the availability of component or function under a third-party contract.
- **Resilience:** A measure of freedom from operational failure and a method of keeping services reliable. One popular method of resilience is redundancy.
- **Security:** A service may have associated data. Security refers to the confidentiality, integrity, and availability of that data. Availability gives a clear overview of the end-to-end availability of the system.

Capacity management

Capacity management supports the optimum and cost-effective provision of IT services by helping organizations match their IT resources to business demands. The high-level activities include:

- application sizing
- workload management
- demand management
- modelling
- capacity planning
- resource management
- performance management

Capacity management is focused on strategic capacity, including capacity of personnel (e.g., human resources, staffing and training), system capacity, and component (or tactical) capacity.

IT service continuity management

IT service continuity management (ITSCM) covers the processes by which plans are put in place and managed to ensure that IT services can recover and continue even after a serious incident occurs. It is not just about reactive measures, but also about proactive measures – reducing the risk of a disaster in the first instance.

ITSCM is regarded by the application owners as the recovery of the IT infrastructure used to deliver IT services, but as of 2009[3] many businesses practice the much further-reaching process of business continuity planning (BCP), to ensure that the whole end-to-end business process can continue should a serious incident occur (at primary support level).

ITSCM involves the following basic steps:

- prioritising the activities to be recovered by conducting a business impact analysis (BIA)
- performing a risk assessment (aka risk analysis) for each of the IT services to identify the assets, threats, vulnerabilities and countermeasures for each service.
- evaluating the options for recovery
- producing the contingency plan
- testing, reviewing, and revising the plan on a regular basis.

Information security management system

Main article: ITIL security management

The ITIL-process Security Management describes the structured fitting of information security in the management organization. ITIL security management is based on the code of practice for *information security management system* (ISMS) now known as ISO/IEC 27002.

A basic goal of security management is to ensure adequate information security. The primary goal of information security, in turn, is to protect information assets against risks, and thus to maintain their value to the organization. This is commonly expressed in terms of ensuring their confidentiality, integrity and availability, along with related properties or goals such as authenticity, accountability, non-repudiation and reliability.

Mounting pressure for many organizations to structure their information security management systems in accordance with ISO/IEC 27001 requires revision of the ITIL v2 security management volume, which culminated in the release of the 2007 edition.

Supplier Management

The purpose of Supplier Management is to obtain value for money from suppliers and contracts. It ensures that underpinning contracts and agreements align with business needs, Service Level Agreements and Service Level Requirements. Supplier Management oversees process of identification of business needs, evaluation of suppliers, establishing contracts, their categorization, management and termination.

Service transition

Service transition (ST), as described by the ITIL service transition volume, relates to the delivery of services required by a business into live/operational use, and often encompasses the "project" side of IT rather than business as usual (BAU). This area also covers topics such as managing changes to the BAU environment.

List of ITIL processes in service transition:

1. Transition planning and support
2. Change management
3. Service asset and configuration management
4. Release and deployment management

5. Service validation and testing
6. Change evaluation
7. Knowledge management

Change management

Main article: Change management (ITSM)

Change management aims to ensure that standardised methods and procedures are used for efficient handling of all changes. A change is an event that results in a new status of one or more configuration items (CIs), and which is approved by management, is cost-effective, enhances business process changes (fixes) – all with a minimum risk to IT infrastructure.

The main aims of change management include:

- Minimal disruption of services
- Reduction in back-out activities
- Economic use of resources involved in the change

Common change management terminology includes:

- *Change*: the addition, modification or removal of CIs
- *Request For Change (RFC)* or, in older terminology, *Change Request (CR)*: a form used to record details of a request for a change and is sent as an input to Change Management by the Change Requestor
- *ITIL v2 - Forward Schedule of Changes (FSC)*: schedule that contains details of all forthcoming Changes.
- *ITIL 2007 - Change Schedule (CS)*: schedule that contains details of all forthcoming Changes, and references historical data. Many people still refer to the known term FSC.

Service asset and configuration management

Service asset and configuration management is primarily focused on maintaining information (i.e., configurations) about Configuration Items (i.e., assets) required to deliver an IT service, including their relationships. Configuration management is the management and traceability of every aspect of a configuration from beginning to end and it includes the following key process areas under its umbrella:

- Identification
- Planning
- Change control
- Change management
- Release management
- Maintenance

Release and deployment management

Release and deployment management is used by the software migration team for platform-independent and automated distribution of software and hardware, including license controls across the entire IT infrastructure. Proper software and hardware control ensures the availability of licensed, tested, and version-certified software and hardware, which functions as intended when introduced into existing infrastructure. Quality control during the development and implementation of new hardware and software is also the responsibility of Release Management. This guarantees that all software meets the demands of the business processes. Release management utilizes Definitive Media Library for storage of software.

The goals of release management include:

- Planning the rollout of software
 - Designing and implementing procedures for the distribution and installation of changes to IT systems
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- Effectively communicating and managing expectations of the customer during the planning and rollout of new releases
- Controlling the distribution and installation of changes to IT systems

Release management focuses on the protection of the live environment and its services through the use of formal procedures and checks.

A Release consists of the new or changed software and/or hardware required to implement approved changes.

Release categories include:

- Major software releases and major hardware upgrades, normally containing large amounts of new functionality, some of which may make intervening fixes to problems redundant. A major upgrade or release usually supersedes all preceding minor upgrades, releases and emergency fixes.
- Minor software releases and hardware upgrades, normally containing small enhancements and fixes, some of which may have already been issued as emergency fixes. A minor upgrade or release usually supersedes all preceding emergency fixes.
- Emergency software and hardware fixes, normally containing the corrections to a small number of known problems.

Releases can be divided based on the release unit into:

- Delta release: a release of only that part of the software which has been changed. For example, security patches.
- Full release: the entire software program is deployed—for example, a new version of an existing application.
- Packaged release: a combination of many changes—for example, an operating system image which also contains specific applications.

Service operation

Service Operation (SO) aims to provide best practice for achieving the delivery of agreed levels of services both to end-users and the customers (where "customers" refer to those individuals who pay for the service and negotiate the SLAs). Service operation, as described in the ITIL Service Operation volume, is the part of the lifecycle where the services and value is actually directly delivered. Also the monitoring of problems and balance between service reliability and cost etc. are considered. The functions include technical management, application management, operations management and service desk as well as, responsibilities for staff engaging in Service Operation.

List of processes:

1. Event management
2. Incident management
3. Request fulfillment
4. Problem management
5. Identity management

Functions

Service desk

The *service desk* is one of four ITIL functions and is primarily associated with the Service Operation lifecycle stage. Tasks include handling incidents and requests, and providing an interface for other ITSM processes. Features include:

- single point of contact (SPOC) and not necessarily the first point of contact (FPOC)
- single point of entry
- single point of exit
- easier for customers
- streamlined communication channel

Primary purposes of a service desk include:

- incident control: life-cycle management of all service requests
- communication: keeping a customer informed of progress and advising on workarounds

The service desk function can have various names, such as:

- *Call center*: main emphasis on professionally handling large call volumes of telephone-based transactions
- *Help desk*: manage, co-ordinate and resolve incidents as quickly as possible at primary support level
- *Service desk*: not only handles incidents, problems and questions but also provides an interface for other activities such as change requests, maintenance contracts, software licenses, service-level management, configuration management, availability management, financial management and IT services continuity management

The three *types* of structure for consideration:

- *Local service desk*: to meet local business needs – practical only until multiple locations requiring support services are involved
- *Central service desk*: for organizations having multiple locations – reduces operational costsWikipedia:Citation needed and improves usage of available resources
- *Virtual service desk*: for organizations having multi-country locations – can be situated and accessed from anywhere in the world due to advancesWikipedia:Manual of Style/Dates and numbers#Chronological items in network performance and telecommunications, reducing operational costsWikipedia:Citation needed and improving usage of available resources

Application management

ITIL *application management* encompasses a set of best practices proposed to improve the overall quality of IT software development and support through the life-cycle of software development projects, with particular attention to gathering and defining requirements that meet business objectives.

Software asset management (SAM) is a primary topic of ITILv2 and is closely associated with the ITIL Application Management function. SAM is the practice of integrating people, processes, and technology to allow software licenses and usage to be systematically tracked, evaluated, and managed. The goal of SAM is to reduce IT expenditures, human resource overhead and risks inherent in owning and managing software assets.

SAM practices include:

- maintaining software license compliance
- tracking inventory and software asset use
- maintaining standard policies and procedures surrounding definition, deployment, configuration, use, and retirement of software assets and the definitive software library.

SAM represents the software component of IT asset management. This includes hardware asset management because effective hardware inventory controls are critical to efforts to control software. This means overseeing software and

hardware that comprise an organization's computers and network.

IT operations management

Refer to #ICT infrastructure management for more details.

Technical management

Refer to #ICT infrastructure management for more details.

Event management

An event may indicate that something is not functioning correctly, leading to an incident being logged. Events may also indicate normal activity, or a need for routine intervention such as changing a tape. Event management depends on monitoring, but it is different. Event management generates and detects notifications, while monitoring checks the status of components even when no events are occurring. Events may be detected by a CI sending a message, or by a management tool polling the CI. After an event has been detected it may lead to an Incident, Problem or Change, or it may simply be logged in case the information is needed. Response to an event may be automated or may require manual intervention. If actions are needed then a trigger, such as an SMS message or an incident being automatically logged, can alert support staff.

Incident management

Main article: Incident management (ITSM)

Incident management aims to restore normal service operation as quickly as possible and minimise the adverse effect on business operations, thus ensuring that the best possible levels of service quality and availability are maintained. 'Normal service operation' is defined here as service operation within service-level agreement (SLA) limits.

An incident is defined as:

2007: An unplanned interruption to an IT service or a reduction in the quality of an IT service. Failure of a configuration item that has not yet impacted service is also an incident. For example, failure of one disk from a mirror set.

V2: An event which is not part of the standard operation of a service and which causes or may cause disruption to or a reduction in the quality of services and customer productivity.

The objective of incident management is to restore normal operations as quickly as possible with the least possible impact on either the business or the user, at a cost-effective price. The transformation between event-to-incident is the critical junction where Application Performance Management (APM) and ITIL come together to provide tangible value back to the business.

Request fulfillment

Request fulfillment (or request management) focuses on fulfilling Service Requests, which are often minor (standard) *changes* (e.g., requests to change a password) or requests for information.

The term "standard change" means pre-approved, repeatable, pre-defined, low risk changes. If the change does not meet these criteria then it is not a standard change and should not be defined as a request.

Problem management

Main article: Problem management

Problem management aims to resolve the root causes of incidents and thus to minimise the adverse impact of incidents and problems on business that are caused by errors within the IT infrastructure, and to prevent recurrence of incidents related to these errors. A 'problem' is the unknown underlying cause of one or more incidents, and a

'known error' is a problem that is successfully diagnosed and for which either a work-around or a permanent resolution has been identified. The CCTA (Central Computer and Telecommunications Agency) defines problems and known errors as follows

A *problem* is a condition often identified as a result of multiple incidents that exhibit common symptoms. Problems can also be identified from a single significant incident, indicative of a single error, for which the cause is unknown, but for which the impact is significant.

A *known error* is a condition identified by successful diagnosis of the root cause of a problem, and the subsequent development of a work-around.

Problem management differs from *incident management*. The principal purpose of *problem management* is to find and resolve the root cause of a problem and thus prevent further incidents; the purpose of *incident management* is to return the service to normal level as soon as possible, with smallest possible business impact.

The problem-management process is intended to reduce the number and severity of incidents and problems on the business, and report it in documentation to be available for the first-line and second line of the help desk. The proactive process identifies and resolves problems before incidents occur. Such processes include:

- Trend analysis
- Targeting support action
- Providing information to the organization

The *error control process* iteratively diagnoses known errors until they are eliminated by the successful implementation of a change under the control of the Change Management process.

The *problem control process* aims to handle problems in an efficient way. Problem control identifies the root cause of incidents and reports it to the service desk. Other activities are:

- Problem identification and recording
- Problem classification
- Problem investigation and diagnosis

Root cause analysis

Root cause analysis is a formal problem-solving process and a critical component of Problem Management. Once a problem (or potential problem) has been identified, the root cause analysis process begins. The purpose of a root cause analysis is two-fold: 1) Develop a thorough understanding of the problem and its causes, and 2) Identify corrective/preventive actions that will reduce the risk of recurrence to an acceptable level. Classic root cause analysis methods include the 5-whys and *Ishikawa diagram* or fishbone diagram. Others have since developed more advanced root cause analysis methodologies, some with corresponding software applications.

Benefits from employing a standard, structured root cause analysis methodology include:

- Common terms, language, and structure with respect to root cause analysis
 - Problem identification, including actual and potential impact
 - Identification of the problem's causes, their interactions, and the supporting evidence
 - Identification of corrective/preventive actions (CAPA) that will prevent recurrence
 - Creation of a knowledge base that can be used by others as a resource
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Identity management

Main article: Identity management

Identity management (IdM) less commonly called Access and Identity Management (AIM) as a process focuses on granting authorised users the right to use a service, while preventing access to non-authorised users. Certain identity management processes executes policies defined in Information Security Management System.

Continual service improvement (CSI)

Continual service improvement, defined in the ITIL continual service improvement volume, aims to align and realign IT services to changing business needs by identifying and implementing improvements to the IT services that support the business processes. It incorporates many of the same concepts articulated in the Deming Cycle of *Plan-Do-Check-Act*. The perspective of CSI on improvement is the business perspective of service quality, even though CSI aims to improve process effectiveness, efficiency and cost effectiveness of the IT processes through the whole lifecycle. To manage improvement, CSI should clearly define what should be controlled and measured.

CSI needs to be treated just like any other service practice. Wikipedia:Citation needed There needs to be upfront planning, training and awareness, ongoing scheduling, roles created, ownership assigned, and activities identified to be successful. CSI must be planned and scheduled as process with defined activities, inputs, outputs, roles and reporting. Continual Service Improvement and Application Performance Management (APM) are two sides of the same coin. They both focus on improvement with APM tying together *service design*, *service transition*, and *service operation* which in turn helps raise the bar of operational excellence for IT.

Improvement initiatives typically follow a seven-step process:

1. Identify the strategy for improvement
2. Define what you will measure
3. Gather the data
4. Process the data
5. Analyse the information and data
6. Present and use the information
7. Implement improvement

Overview of ITIL v2

The eight ITIL version 2 books and their disciplines are:

The IT service management sets

1. Service Support
2. Service Delivery

Other operational guidance

3. ICT infrastructure management
4. Security management
5. Application management
6. Software asset management

To assist with the implementation of ITIL practices a further book was published (Apr 9, 2002) providing guidance on implementation (mainly of Service Management):

7. Planning to implement service management

And this has more recently (Jan 26, 2006) been supplemented with guidelines for smaller IT units, not included in the original eight publications:

8. ITIL small-scale implementation

Service support

The Service Support ITIL discipline focuses on the *User* of the IT services and is primarily concerned with ensuring that they have access to the appropriate services to support the business functions.

To a business, customers and users are the entry point to the process model. They get involved in service support by:

- Asking for changes
- Needing communication, updates
- Having difficulties, queries
- Real process delivery

The service desk functions are the single contact-point for end-users' incidents. Its first function is always to document ("create") an incident. If there is a direct solution, it attempts to resolve the incident at the first level. If the service desk cannot solve the incident then it is passed to a 2nd/3rd level group within the incident management system. Incidents can initiate a chain of processes: incident management, problem management, change management, release management and configuration management. This chain of processes is tracked using the configuration management database (CMDB), - ITIL refers to configuration management system (CMS), which records each process, and creates output documents for traceability (quality management). Note - CMDB/CMS does not have to be a single database. The solution can be Federated.

Service delivery

The service delivery discipline concentrates on the proactive services the ICT must deliver to provide adequate support to business users. It focuses on the business as the *customer* of the ICT services (compare with: service support). The discipline consisted of the following processes:

- Service level management
- Capacity management
- IT service continuity management
- Availability management
- Financial management

ICT infrastructure management

Information and Communication Technology (ICT) management processes recommend best practice for requirements analysis, planning, design, deployment and ongoing operations management and technical support of an ICT infrastructure.

The infrastructure management processes describe those processes within ITIL that directly relate to the ICT equipment and software that is involved in providing ICT services to customers.

- ICT design and planning
- ICT deployment
- ICT operations
- ICT technical support

These disciplines are less well understood than those of service management and therefore often some of their content is believed to be covered 'by implication' in service management disciplines.

ICT design and planning

ICT design and planning provides a framework and approach for the strategic and technical design and planning of ICT infrastructures. It includes the necessary combination of business (and overall IS) strategy, with technical design and architecture. ICT design and planning drives both the procurement of new ICT solutions through the production of statements of requirement ("SOR") and invitations to tender ("ITT") and is responsible for the initiation and management of ICT Programmes for strategic business change. Key outputs from design and planning are:

- ICT strategies, policies and plans
- the ICT overall architecture & management architecture
- feasibility studies, ITTs and SORs
- business cases

ICT deployment management

ICT deployment provides a framework for the successful management of design, build, test and roll-out (deploy) projects within an overall ICT programme. It includes many project management disciplines in common with PRINCE2, but has a broader focus to include the necessary integration of release management and both functional and non functional testing.

ICT operations management

ICT operations management provides the day-to-day technical supervision of the ICT infrastructure. Often confused with the role of incident management from service support, operations has a more technical bias and is concerned not solely with incidents reported by users, but with events generated by or recorded by the infrastructure. ICT operations may often work closely alongside incident management and the service desk, which are not-necessarily technical, to provide an 'operations bridge'. Operations, however should primarily work from documented processes and procedures and should be concerned with a number of specific sub-processes, such as: output management, job scheduling, backup and restore, network monitoring/management, system monitoring/management, database monitoring/management storage monitoring/management. Operations are responsible for the following:

- a stable, secure ICT infrastructure
- a current, up to date operational documentation library ("ODL")
- a log of all operational events
- maintenance of operational monitoring and management tools.
- operational scripts
- operational procedures

ICT technical support

ICT technical support is the specialist technical function for infrastructure within ICT. Primarily as a support to other processes, both in infrastructure management and service management, technical support provides a number of specialist functions: research and evaluation, market intelligence (particularly for design and planning and capacity management), proof of concept and pilot engineering, specialist technical expertise (particularly to operations and problem management), creation of documentation (perhaps for the operational documentation library or known error database). There are different levels of support under the ITIL structure, these being primary support level, secondary support level and tertiary support level, higher-level administrators being responsible for support at primary level.

The Known Error Database (KEDB) database contains all known error records. This database is created by problem management and used by incident management and problem management, and as part of service knowledge management systems.^[4]

Planning to implement service management

The ITIL discipline – planning to implement service management attempts to provide practitioners with a framework for the alignment of business needs and IT provision requirements. The processes and approaches incorporated within the guidelines suggest the development of a continuous service improvement program (CSIP) as the basis for implementing other ITIL disciplines as projects within a controlled program of work. Planning to implement service management focuses mainly on the service management processes, but also applies generically to other ITIL disciplines. Components include:

- creating vision
- analysing organization
- setting goals
- implementing IT service management

Small-scale implementation

ITIL *Small-scale implementation* provides an approach to ITIL framework implementation for smaller IT units or departments. It is primarily an auxiliary work that covers many of the same best practice guidelines as *planning to implement service management*, *service support*, and *service delivery* but provides additional guidance on the combination of roles and responsibilities, and avoiding conflict between ITIL priorities.

Related frameworks

A number of frameworks exist in the field of IT Service Management alongside ITIL.

Descendants

Microsoft Operations Framework

The Microsoft Operations Framework (MOF) is based on ITIL v2. While ITIL deliberately aims to be platform-agnostic, MOF is designed by Microsoft to provide a common management framework for *its* products. Microsoft has mapped MOF to ITIL as part of their documentation of the framework.

FITS

The British Educational Communications and Technology Agency (BECTA) used ITIL as the basis for their development of Framework for ICT Technical Support ^[5] (FITS). Their aim was to develop a framework appropriate for British schools, which often have very small IT departments. FITS became independent from BECTA in 2009 and is now maintained and supported by The FITS Foundation. FITS is now used in excess of a thousand schools in the UK, Australia and Norway as the standard for ICT Service Management in the Education sector (Video: What people are saying ^[6]).

Other frameworks

ITIL is generally equivalent to the scope of the ISO/IEC 20000 standard (previously BS 15000). While it is not possible for an organization to be certified as being ITIL compliant, certification of an organization is available for ISO20000.

COBIT is an IT governance framework and supporting toolset developed by ISACA. ISACA view ITIL as being complementary to COBIT. They see COBIT as providing a governance and assurance role while ITIL providing guidance for service management.

The enhanced Telecom Operations Map eTOM published by the TeleManagement Forum offers a framework aimed at telecommunications service providers. In a joined effort, TM Forum and itSMF developed an Application Note to

eTOM (GB921) that shows how the two frameworks can be mapped to each other. It addresses how eTom process elements and flows can be used to support the processes identified in ITIL.

IBM Tivoli Unified Process (ITUP) is aligned with ITIL, but is presented as a complete, integrated process model compatible with IBM's products.

Certification

Individuals

The certification scheme differs between ITIL v2 and ITIL 2007/2011, and bridge examinations (now retired) allowed owners of v2 certificates to transfer to the new program. [Wikipedia:Citation needed](#) **ITIL v2** offers three certification levels: *Foundation*, *Practitioner* and *Manager*. These were progressively discontinued in favor of the new scheme introduced along with the publication of the 2007 Edition. ITIL certification levels are now: *Foundation*, *Intermediate*, *Expert* and *Master*. In addition, the single-process practitioner certifications that were offered by OGC for version 2 have now been replaced and the offering expanded by what are known as complementary certifications.

The ITIL certification scheme now offers a modular approach. Each qualification is assigned a credit value; so that upon successful completion of the module, the candidate is rewarded with both a certification and a number of credits. At the lowest level – Foundation – candidates are awarded a certification and two credits. At the Intermediate level, a total of additional 15 credits have to be earned. These credits may be accumulated in either a "Lifecycle" stream^[7] or a "Capability" stream;^[8] or combination thereof. Each Lifecycle module and exam is three credits. Each Capability module and corresponding exam is four credits. A candidate wanting to achieve the Expert level will have, among other requirements, to gain the required number of credits (22). That is accomplished with two from Foundations, then at least 15 from Intermediate, and finally five credits from the "Managing Across the Lifecycle" exam. Together, the total of 22 earned credits allows a person to request designation as an ITIL Expert. Advancing from the expert to the master level does not require additional credits, but does require at least five years of IT domain work experience and an extensive usage of ITIL practices.

The complementary certifications also have point values, ranging from 0.5 to 1.5 credits, which can be applied towards ITIL Expert certification. However, only a maximum of six credits from complementary certifications can be applied towards the Expert certification.

The ITIL Certification Management Board (ICMB) manages ITIL certification. The Board includes representatives from interested parties within the community around the world. Members of the Board include (though are not limited to) representatives from the UK Office of Government Commerce (OGC), APM Group (APMG), The Stationery Office (TSO), ITIL Examination Panel, Examination Institutes (EIs) and the IT Service Management Forum International (*itSMF*) as the recognised user group.

Since the early 1990s, EXIN and ISEB had been setting up the ITIL based certification program, developing and providing ITIL exams at three different levels: Foundation, Practitioner and Manager. EXIN and BCS/ISEB (the British Computer Society) had from that time onwards been the only two examination providers in the world to develop formally acknowledged ITIL certifications, provide ITIL exams and accredit ITIL training providers



An ITILv2 Foundation Badge.

worldwide. These rights were obtained from OGC, the British government institution and owner of the ITIL trademark. Wikipedia:Citation needed OGC signed over the management of the ITIL trademark and the accreditation of examination providers to APM Group in 2006. Now, after signing a contract with EXIN, BCS/ISEB, Loyalist Certification Services [9], PeopleCert Group ^[10] and other certification bodies, APM Group has accredited them as official examination bodies, to offer ITIL exams and accredit ITIL training providers. Wikipedia:Citation needed

On July 20, 2006, the OGC signed a contract with the APM Group ^[11] to become its commercial partner for ITIL accreditation from January 1, 2007. APMG manage the ITIL Version 3 exams.

APMG maintains a voluntary register of ITIL certified practitioners at their Successful Candidate Register. ^[12]

Pins

Following the passing an APMG/EXIn exam in IT service management (based on ITIL), some people will wear a metal pin on their shirt or jacket. This badge, provided by the ITSMF with basic gold color is set in the form of the ITIL-logo. The ITIL pins consist of a small, diamond-like structure. The meaning and the shape of the diamond is meant to depict coherence in the IT industry (infrastructure as well). The four corners of the pin symbolise service support, service delivery, infrastructure management and IT management.

There are five colors of ITIL pins - each corresponds to the color of the associated core publication:

- ITIL Foundation Badge (Pastel Green). This ITIL lapel pin takes its color from the ITIL Service Strategy book and is awarded on successful completion of the ITIL Foundation exam.
- ITIL Intermediate Capability Badge (Burgundy). There are four ITIL Capability courses. (RCV, OSA, SOA, PPO). You are able to apply for this lapel pin once you have passed each exam. Some examination institutes such as APMG International will send the pins automatically with the candidate's certificate. This badge shares its color with the ITIL Service Transition book.
- ITIL Intermediate Lifecycle Badge (Teal). For each of the five ITIL Lifecycle courses (SS, SD, ST, SO, CSI), candidates receive this lapel pin after passing the exam. The color for this pin is based on the ITIL Service Operation book.
- ITIL Expert Badge (Lilac). This is currently the highest qualification available with ITIL. The lapel pin is awarded a candidate attains 22 credits through a combination of ITIL training courses. The pin takes its color from the ITIL Continual Service Improvement book.
- ITIL Master Badge (Purple, with the letter M in the middle). Currently in pilot phase this qualification has no training course or exam associated with it. To gain qualification as an ITIL Master, candidates have to have his/her work peer-reviewed by a panel of experts. Once an ITIL Expert has achieved this status, the ITIL Master can wear a lapel pin based on the color of the ITIL Service Design book, which also has a Gold M in the centre.

There are three colors of ITIL V2 pins:

- ITILv2 Foundation Badge (green)
- ITILv2 Practitioner Badge (blue)
- ITILv2 Manager Badge (red)

Exam candidates who have successfully passed the examinations for ITIL will receive their appropriate pin from APMG, EXIN or their certification provider regional office or agent.

Organizations

Organizations and management systems cannot claim certification as "ITIL-compliant". An organization that has implemented ITIL guidance in IT Service Management (ITSM), may however, be able to achieve compliance with and seek certification under ISO/IEC 20000. Note that there are some significant differences between ISO/IEC20000 and ITIL

- ISO20000 only recognises the management of financial assets, not assets which include "management, organization, process, knowledge, people, information, applications, infrastructure and financial capital", nor the concept of a "service asset". So ISO20000 certification does not address the management of 'assets' in an ITIL sense.
- ISO20000 does not recognise Configuration Management System (CMS) or Service Knowledge Management System (SKMS), and so does not certify anything beyond Configuration Management Database (CMDB).
- An organization can obtain ISO20000 certification without recognising or implementing the ITIL concept of Known Error, which is usually considered essential to ITIL.

Tools

Starting in 2009, the APM Group, UK, established an ITIL Software Scheme (ISS) which allows IT Service Management software ITSM tool vendors to obtain endorsement through the Cabinet Office for an ITIL-based tool. This endorsement allows vendors to hold a valid ISS trademark licence and use the process compliant ITIL 'swirl' logo at a bronze, silver or gold level.

The ISS assessment operates through Licensed Software Assessors. Currently there are two companies listed as Licensed Software Assesors: Pink Elephant, and Glenfis AG. In 1998 Pink Elephant released its PinkVerify assessment service, the 2011 version assesses a software tool against ITIL terminology, definitions, functionality and workflow requirements for the following 15 ITSM processes: Availability Management, Capacity Management, Change Management, Event Management, Financial Management, Incident Management, IT Service, Continuity Management, Knowledge Management, Problem Management, Release & Deployment Management, Request Fulfillment, Service Asset & Configuration Management, Service Catalog Management, Service Level Management, Service Portfolio Management. Currently there are three tools holding the PinkVerify 2011 certification for those 15 ITIL processes: CA Service Desk Manager Suite ^[13], Dexon Software V6 ^[14] and SAP Solution Manager ^[15].

Criticism

ITIL has been criticised on several fronts, including:

- the books are not affordable for non-commercial users
- implementation and accreditation requires specific training
- debate over ITIL falling under BSM or ITSM frameworks
- the ITIL details are not aligned with the other frameworks like ITSM

Rob England (also known as "IT Skeptic") has criticised the protected and proprietary nature of ITIL. He urges the publisher, Cabinet Office, to release ITIL under the Open Government Licence (OGL).

CIO Magazine columnist Dean Meyer has also presented some cautionary views of ITIL,^[16] including five pitfalls such as "becoming a slave to outdated definitions" and "Letting ITIL become religion." As he notes, "...it doesn't describe the complete range of processes needed to be world class. It's focused on ... managing ongoing services."

In a 2004 survey designed by Noel Bruton (author of "How to Manage the IT Helpdesk" and "Managing the IT Services Process"), organizations adopting ITIL were asked to relate their actual experiences in having implemented ITIL. Seventy-seven percent of survey respondents either agreed or strongly agreed that "ITIL does not have all the answers". ITIL exponents accept this, citing ITIL's stated intention to be non-prescriptive, expecting organizations to engage ITIL processes with existing process models. Bruton notes that the claim to non-prescriptiveness must be, at

best, one of scale rather than absolute intention, for the very description of a certain set of processes is in itself a form of prescription.^[17]

While ITIL addresses in depth the various aspects of service management, it does not address enterprise architecture in such depth. Many of the shortcomings in the implementation of ITIL do not necessarily come about because of flaws in the design or implementation of the service management aspects of the business, but rather the wider architectural framework in which the business is situated. Because of its primary focus on service management, ITIL has limited utility in managing poorly designed enterprise architectures, or how to feed back into the design of the enterprise architecture.

Closely related to the architectural criticism, ITIL does not directly address the business applications which run on the IT infrastructure; nor does it facilitate a more collaborative working relationship between development and operations teams. The trend toward a closer working relationship between development and operations is termed: DevOps. This trend is related to increased application release rates and the adoption of agile software development methodologies. Traditional service management processes have struggled to support increased application release rates – due to lack of automation – and/or highly complex enterprise architecture.

Some researchers group ITIL with lean, Six Sigma and Agile software development operations management. Wikipedia:Citation needed Applying Six Sigma techniques to ITIL brings the engineering approach to ITIL's framework. Applying Lean techniques promotes continuous improvement of the ITIL's best practices. However, ITIL itself is not a transformation method, nor does it offer one. Readers are required to find and associate such a method. Some vendors have also included the term Lean when discussing ITIL implementations, for example "Lean-ITIL". Wikipedia:Citation needed The initial consequences of an ITIL initiative tend to *add* cost with benefits promised as a future deliverable. Wikipedia:Citation needed ITIL does not provide usable methods "out of the box" to identify and target waste, or document the customer value stream as required by Lean, and measure customer satisfaction. Wikipedia:Avoid weasel words

Notes

- [1] Office of Government Commerce (UK) CCTA and OGC (<http://www.ogc.gov.uk/index.asp?id=1878>). Retrieved May 5, 2005.
- [2] Office of Government Commerce (UK) (http://www.ogc.gov.uk/guidance_itil.asp). Retrieved August 19, 2009.
- [3] http://en.wikipedia.org/w/index.php?title=Information_Technology_Infrastructure_Library&action=edit
- [4] CSU: ITIL Known Error Database (KEDB) (<http://www.youtube.com/watch?v=k0OI3RvaKuc>)
- [5] <http://www.thefitsfoundation.org>
- [6] <http://www.youtube.com/watch?v=ast-ZPLaMkU&feature=youtu.be>
- [7] The Lifecycle stream follows the ITIL core volumes; there are therefore 5 modules also called *Service Strategy*, *Service Design*, *Service Transition*, *Service Operation* and *Continual Service Improvement*.
- [8] The Capability stream is more focused on process activities; the 4 modules available in 2013 are *Operational support and analysis* (OSA), *Service offerings and agreements* (SOA), *Planning protection and optimization* (PPO) and *Release, control and validation* (RCV).
- [9] <http://www.loyalistexams.com>
- [10] <http://www.peoplecert.org>
- [11] <http://www.apmgroupltd.com/>
- [12] <http://www.apmg-international.com/ITILSCRquery.asp>
- [13] <http://www.ca.com/>
- [14] <http://www.dexon.us>
- [15] <http://www.sap.com/solution/lob/it/software/service-management/index.html>
- [16] Meyer, Dean, 2005. "Beneath the Buzz: ITIL" (<http://web.archive.org/web/20050404165524/http://www.cio.com/leadership/buzz/column.html?ID=4186>), *CIO Magazine*, March 31, 2005
- [17] Survey: "The ITIL Experience – Has It Been Worth It", author Bruton Consultancy 2004, published by Helpdesk Institute Europe, The Helpdesk and IT Support Show, and Hornbill Software.

References

External links

- Official ITIL Website (<http://www.iti1-officialsite.com>)
 - AXELOS Ltd (<http://www.axelos.com>)
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