IT SERVICE MANAGEMENT

A Guide for ITIL®V3 Foundation Exam Candidates

Ernest Brewster, Richard Griffiths,
Aidan Lawes, John Sansbury

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AUTHORS

Ernest Brewster has over 30 years' experience in IT, including 20 years as a senior manager in various public sector organisations, latterly as Head of IT at Fife Council, one of Scotland's largest local authorities with over 15,000 personal computers and a network linking several hundred separate sites. He is a long-time champion of ITIL® Service Management, with a record of implementing ITIL-based good practice in complex organisations, and an expert in strategy development, programme and project management, business process re-engineering and public procurement. Ernest is an ex-member of SOCITM's National Executive Committee and a contributor to several of SOCITM's MAPIT (now Insight) publications.

Richard Griffiths is an experienced and respected Service Management expert, and has worked as practitioner, trainer and consultant in all aspects of ITIL for a number of organisations worldwide. He has been a question compiler and examiner at all levels for ten years and uses the knowledge gained from running many Foundation courses to tailor his writing to the audience of potential candidates.

Aidan Lawes is one the world's leading independent authorities on, and a passionate champion of, IT Service Management (SM). Educated in New Zealand, he started his working life there in the insurance industry, before leaving to travel. On settling in the UK, he joined the Civil Service and entered the world of IT. There followed 20 years working for ICL in a variety of training and consultancy roles around the globe, including working on major service management projects in the financial and public sectors in Europe. From 1999 to 2007, he was CEO of *it*SMF UK and International, overseeing phenomenal membership and revenue growth, and spreading the SM gospel globally. Aidan is a Fellow of both the ISM and BCS, and has contributed to many ITSM publications (including ITIL), co-authored the BSI standard and its International successor (ISO/IEC 20000), chaired the ITIL V3 refresh programme board and participates in many initiatives to raise professional standards. In his spare time, Aidan is a passionate rugby fan, supporting the All Blacks and anyone playing against Australia.

John Sansbury has completed the ITIL-experience jigsaw with the publication of this, his first book, having been a service management practitioner for 25 years, a consultant for 14 years, an ITIL examiner since 1996 and a trainer for three years. Since his career started in IT Operations in the 1970s, John has shunned the technical aspects of IT, partly because it's boring and partly because

he's rubbish at it! Instead, he has excelled at helping organisations deliver real business value from IT. As a practitioner, John learnt his trade with Philips and London Electricity (now EDF) where he helped implement Capacity Management (the interesting bit where you meet business representatives to understand their plans, not the techie, modelling stuff), negotiated the SLAs with the business and developed one of the world's first business-unit based chargeback systems. As a consultant, he has worked with organisations across the world to analyse and improve their IT processes and deliver increased stakeholder value. John is a Chartered Fellow of BCS, the Founder of the Classic Corvette Club UK, a husband of 26 years and the proud father of two successful sons. He's also a masochist, having accepted a commission to write his second book, on the OSA Capability exam.

ABBREVIATIONS

BCM	Business Continuity Management
BIA	Business Impact Analysis
BRM	Business Relationship Management
CAB	Change Advisory Board
CI	Configuration Item
CMDB	Configuration Management Database
CMIS	Capacity Management Information System
CMMI	Capability Maturity Model Integration
CMS	Configuration Management System
COBIT	Control Objectives for Information and related Technology
CRM	Customer Relationship Management
CSI	Continual Service Improvement
DIKW	Data → Information → Knowledge → Wisdom
DML	Definitive Media Library
ECAB	Emergency Change Advisory Board
EFQM	The European Foundation for Quality Management
eSCM–SP	eSourcing Capability Model for Service Providers
ISM	Information Security Management
ISMS	Information Security Management System
ISO	International Organization for Standardization
ITSCM	IT Service Continuity Management
ITSM	IT Service Management
itSMF	IT Service Management Forum
KPI	Key Performance Indicator
MTBF	Mean Time Between Failures

MTBSI	Mean Time Between System Incidents
MTRS	Mean Time to Restore Service
OGC	Office of Government Commerce
OLA	Operational Level Agreement
PBA	Pattern of Business Activity
RACI	An example of an authority matrix: Responsible, Accountable, Consulted, Informed
RFC	Request For Change
ROI	Return On Investment
SACM	Service Asset and Configuration Management
SCD	Supplier and Contracts Database
SD	Service Design
SDP	Service Design Package
SIP	Service Improvement Plan
SKMS	Service Knowledge Management System
SLA	Service Level Agreement
SLAM	SLA Monitoring
SLM	Service Level Management
SLP	Service Level Package
SLR	Service Level Requirements
SM	Service Management
SO	Service Operation
SOX	Sarbannes–Oxley
SPM	Service Portfolio Management
SS	Service Strategy
ST	Service Transition
TCO	Total Cost of Ownership
TSO	The Stationery Office
UC	Underpinning Contract
VBF	Vital Business Function
VOI	Value Of Investment

GLOSSARY†

Glossary definitions here and within the chapters are from ITIL publications.

Alert A warning that a threshold has been reached, something has changed or a failure has occurred.

Capabilities The ability of an organisation, person, process, application, configuration item or IT service to carry out an activity. Capabilities are intangible assets of an organisation.

Configuration Item A Configuration Item (CI) is any component that needs to be managed in order to deliver an IT service. Information about each CI is recorded in a configuration record within the Configuration Management System and is maintained throughout its lifecycle by Configuration Management. CIs are under the control of Change Management. CIs typically include IT services, hardware, software, buildings, people and formal documentation such as process documentation and SLAs.

Configuration Management Database A Configuration Management Database (CMDB) stores configuration records containing Attributes of CIs and their relationships. A CMS may include one or more CMDBs.

Configuration Management System A Configuration Management System (CMS) is a set of tools and databases used to manage an IT service provider's configuration data. The CMS also includes information about Incidents, Problems, known errors, changes and releases, and may contain data about employees, suppliers, locations, business units, customers and users. The CMS includes tools for collecting, storing, managing, updating and presenting data about all CIs and their relationships. The CMS is maintained by Configuration Management and is used by all IT Service Management processes.

Configuration Model A Configuration Model is a model of the services, assets and the infrastructure that includes relationships between CIs, enabling other processes to access valuable information (e.g. assessing the impact of Incidents, Problems and proposed changes; planning and designing new or changed services and their release and deployment; optimising asset utilisation and costs).

Definitive Media Library A Definitive Media Library (DML) is one or more locations in which the definitive and approved versions of all software CIs are securely stored. The DML may also contain associated CIs such as licences and documentation. The DML is a single logical storage area even if there are multiple locations. All software in the DML is under the control of Change and

Release Management and is recorded in the Configuration Management System. Only software from the DML is acceptable for use in a release. See Figure 18.2.

Deployment Deployment is the activity responsible for the movement of new or changed hardware, software, documentation, process etc. to the Live Environment.

Event An Event can be defined as any detectable or discernable occurrence that has significance for the management of the IT infrastructure or the delivery of IT service and evaluation of the impact a deviation may cause to the services. Events are typically notifications created by an IT service, Configuration Item or monitoring tool.

Event Management The Process responsible for managing Events throughout their lifecycle. Event Management is one of the main Activities of IT Operations.

Function A team or group of people and the tools they use to carry out one or more Processes or activities (e.g. the Service Desk or IT Operations).

Incident An Incident is 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 impacted service is also an Incident.

Key Performance Indicator Only the most important metrics are defined as KPIs. KPIs should be selected to ensure that Efficiency, Effectiveness and Cost-Effectiveness are all managed.

Known Error A Problem that has a documented root cause and a workaround. Known Errors are created and managed throughout their lifecycle by Problem Management. Known Errors may also be identified by Development or Suppliers.

Metric Something that is measured and reported to help manage a Process, IT Service or Activity.

Operational Level Agreement An Operational Level Agreement (OLA) is an agreement between an IT service provider and another part of the same organisation. An OLA supports the IT service provider's delivery of IT services to the customers. The OLA defines the goods or services to be provided and the responsibilities of both parties.

Problem A Problem is the cause of one or more Incidents.

Process A Process is a structured set of activities designed to accomplish a specific objective. A Process takes one or more defined inputs and turns them into defined outputs. A Process may include any of the Roles, responsibilities, tools and management controls required to reliably deliver the outputs. A Process may define policies, standards, guidelines, activities and work instructions if they are needed.

Release A Release is a collection of hardware, software, documents, processes or other components required to implement one or more approved Changes to

IT services. The contents of each Release are managed, tested and deployed as a single entity.

Resource A generic term that includes IT infrastructure, people, money or anything else that might help to deliver an IT service. Resources are considered to be assets of an organisation.

Risk Risk is defined as uncertainty of outcome, whether positive opportunity or negative threat. A possible event that could cause harm or loss, or affect the ability to achieve Objectives. A Risk is measured by the probability of a Threat, the Vulnerability of the Asset to that Threat, and the Impact it would have if it occurred.

Role A set of responsibilities, activities and authorities granted to a person or team. A Role is defined in a Process. One person or team may have multiple roles (e.g. the roles of Configuration Manager and Change Manager may be carried out by a single person).

Service A service is a means of delivering value to customers by facilitating outcomes that customers want to achieve without the ownership of specific costs and risks.

Service Change Service Change is the addition, modification or removal of anything that could affect IT services. The scope should include all IT services, CIs, processes, documentation etc.

Service Design Package (Service Design) Document(s) defining all aspects of an IT Service and their Requirements through each stage of its Lifecycle. A Service Design Package is produced for each new IT Service, major Change or IT Service Retirement.

Service Improvement Plan (SIP) A formal Plan to implement improvements to a Process or IT Service.

Service Level Agreement ITIL defines a Service Level Agreement (SLA) as an agreement between an IT service provider and a customer. The SLA describes the IT service, records service level targets, and specifies the responsibilities for the IT service provider and the customer. A single SLA may cover multiple IT services or multiple customers.

Service Level Package A Service Level Package is a defined level of Utility and Warranty for a particular Service Package. Each SLP is designed to meet the needs of a particular Pattern of Business Activity.

Service Management Service Management is a set of specialised organisational capabilities for providing value to customers in the form of services.

Service Package ITIL defines a Service Package as a detailed description of an IT service that is available to be delivered to customers. A Service Package

includes a Service Level Package (SLP) and one or more Core Services and Supporting Services.

Service Request A Service Request is a request from a user for information, for advice, for a Standard Change or for access to an IT Service.

Standard Change A Standard Change is a pre-approved Change that is low risk, relatively common and follows a Procedure or Work Instruction.

Strategic asset Strategic assets are assets that provide the basis for core competence, distinctive performance, durable advantage, and qualifications to participate in business opportunities. IT organisations can use the guidance provided by ITIL to transform their Service Management capabilities into strategic assets.

Supplier A third party responsible for supplying goods or services that are required to deliver IT services.

Utility Functionality offered by a product or service to meet a particular need. Utility is often summarised as 'what it does'.

Warranty A promise or guarantee that a product or service will meet its agreed requirements.

USEFUL WEBSITES

www.efgm.org
European Foundation for Quality Management

www.isaca.org
Information Systems Audit and Control Association

www.iso.org
International Organization for Standardization

www.isoiec20000certification.com
ISO/IEC 20000 certification and qualification schemes

www.itil-officialsite.com
The official ITIL® website

www.itsmf.co.uk
The IT Service Management Forum

www.itsmf.org
*it*SMF International

www.sarbanes-oxley.com
Sarbanes-Oxley

www.sei.cmu.edu/cmmi/
Carnegie Mellon University Capability and Maturity Model

PREFACE

This ITIL Foundation book represents a very different approach to ITIL than any other and in so doing, we believe it will help you understand ITIL at a Foundation level better than any other publication. As a result, you are more likely to score higher in your Foundation exam, more likely to pass the exam and more likely to retain your knowledge of ITIL and use it to benefit you and your organisation. Why? Because we have used our collective experiences to help you understand ITIL, not just memorise it. This gives you an edge in your exam because you will have the potential to work out the right answer, not just rely on your memory from the training course. Furthermore, when you take this back to your organisation, you will have an appreciation of the subject on which you can start to build your expertise, instead of a head full of facts and figures that will rapidly vanish.

The authors have actively helped organisations, ranging from a handful of people to multinational corporations in all industry sectors, adopt ITIL and reap the benefits of better performance, greater consistency and lower cost. We have worked for these organisations, advised them in a consultative capacity, trained their staff and run international forums for their people – yourselves – to benefit from shared experiences.

That is why this ITIL Foundation book will help you make sense of ITIL and we believe it will help you make a difference in your organisation. We know it will help you with your Foundation examination.

Ernest Brewster
Richard Griffiths
Aidan Lawes
John Sansbury

INTRODUCTION

HOW TO USE THIS BOOK

This book covers everything you need to know in order to pass the ITIL Foundation exam. However, we also recognise that many people simply want to understand the ITIL concepts without necessarily taking the exam itself. This book caters for both needs through its simple four-section structure.

- **Section 1:** An overview that introduces the basic concepts of Service Management and good practice, the ITIL framework, the Service Lifecycle and some of the key ITIL concepts such as processes and functions.
- **Section 2:** A view of each of the five stages of the lifecycle from Service Strategy to Continual Service Improvement. Each chapter contains an easy-to-read summary of the core elements of that part of the lifecycle.
- **Section 3:** The core of the book with a chapter describing each of the ITIL processes and functions.
- **Section 4:** Guidance on measurement and metrics, and the Deming improvement cycle.

In addition, the Appendix contains some useful exam techniques.

Naturally we suggest you start by reading Section 1, but, after that, we have designed each chapter to be self-contained and capable of being read in any sequence and without reference to other chapters. Each chapter can be read in 5–10 minutes.

For convenience, we have cross-referenced the chapters in Section 3 (and where applicable in Section 4) with the relevant chapters in the core books for further, more detailed content if the reader wishes to refer to it.

The structure of this book is also aligned with its companion book, *IT Service Management Foundation Practice Questions*. This helps in two ways:

- Questions in *IT Service Management Foundation Practice Questions* related to a particular learning element are listed at the end of the relevant chapters in this book so you can test your knowledge.

- When using *IT Service Management Foundation Practice Questions*, if you find your knowledge of a particular topic needs strengthening, it is easy to find and revise the relevant section in this book.

Within the core ITIL lifecycle volumes, the use of 'Goals', 'Purpose' and 'Objectives' is not always consistent and they are sometimes interchanged. For the benefit of clarity, the authors have standardised on the same heading for each process. The sharp-eyed reader will also notice that not all processes contain the same subheadings. Again, the core volumes are inconsistent in this respect, so the authors have included appropriate headings based on a combination of the Foundation syllabus and reader assistance.

Throughout the book, portions of text have been taken directly from ITIL manuals. This text is indicated by the use of quotation marks and the † symbol. All definitions, which are given in the Glossary and appear in boxes in the text, are taken directly from the OGC source material.

SECTION 1:
OVERVIEW

1 WHAT IS SERVICE MANAGEMENT?

INTRODUCTION

In order to understand what Service Management is, and why it is so important to enterprises, we need to understand what services are, and how Service Management can help service providers to deliver and manage these services.

ITIL defines a service as follows:

SERVICE

A service is a means of delivering value to customers by facilitating outcomes that customers want to achieve without the ownership of specific costs and risks.

The outcomes that customers want to achieve are the reason why they purchase or use a service. Typically this will be expressed as a specific business objective (e.g. to enable customers of a bank to perform all transactions and account management activities online or to deliver state services to citizens in a cost-effective manner). The value of the service to the customer is directly dependent on how well a service facilitates these outcomes.

Although the enterprise retains responsibility for managing the overall costs of the business, they often wish to devolve responsibility for owning and managing defined aspects to an internal or external entity that has acknowledged expertise in the area.

This is a generic concept that applies to the purchase of any service. Consider financial planning. As a customer, we recognise that we don't have the expertise, or the time, or the inclination to handle all the day-to-day decision-making and management of individual investments that are required. Therefore, we engage the services of a professional manager to provide us a service. As long as their performance delivers a value (increasing wealth) at a price that we believe is reasonable, we are happy to let them invest in all the necessary systems and processes that are needed for the wealth creation activities.

In the past, service providers often focused on the technical (supply side) view of what constituted a service, rather than on the consumption side. Hence it was not

unusual for the service provider and the consumer to have different definitions and perceptions of what services were provided, or for the provider to know all about the cost of individual components, but not the total cost of a service that the consumer understood.

Service Management is what enables a service provider to:

- understand the services that they are providing from both a consumer and provider perspective;
- ensure that the services really do facilitate the outcomes that their customers want to achieve;
- understand the value of those services to their customers and hence their relative importance;
- understand and manage all of the costs and risks associated with providing those services.

SERVICE MANAGEMENT

Service Management is a set of specialised organisational capabilities for providing value to customers in the form of services.

These 'specialised organisational capabilities' include the processes, activities, functions and roles that a service provider uses to let them to deliver services to their customers, as well as the ability to establish suitable organisation structures, manage knowledge, and understand how to facilitate outcomes that create value.

Although there is no single definition of a profession practice, it is widely accepted that the word profession applies where a group of people share common standards and disciplines based on a high level of knowledge and skills, which are gained from organised education schemes supported by training through experience and are measured and recognised through formal qualifications. Moreover, a profession seeks to use its influence through the development of good practice guidance and advice in order to improve the standard of performance in its given field. Service Management has a clear right to regard itself as a profession and the exercise of Service Management disciplines as professional practice.

Service Management is also a professional practice performed and supported by a global community drawn from all market sectors. There is a rich body of knowledge and experience including formal schemes for the education of individuals.

'BEST PRACTICE' VERSUS 'GOOD PRACTICE'

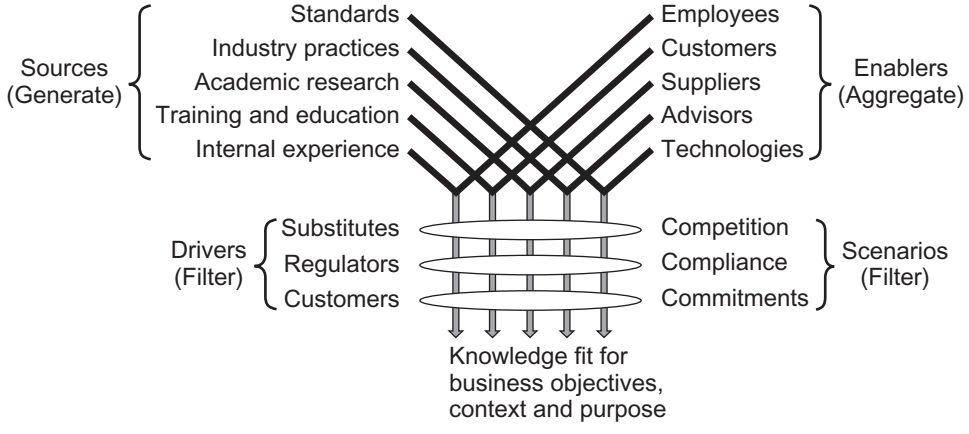
Enterprises operating in dynamic environments need to improve their performance and maintain competitive advantage. Adopting practices in industry-wide use can help to improve capability.

The term 'best practice' generally refers to the 'best possible way of doing something'. As a concept, it was first raised as long ago as 1919, but it was popularised in the 1980s through Tom Peters' books on business management.

The idea behind best practice is that one creates a specification for what is accepted by a wide community as being the best approach for any given situation. Then, one can compare actual job performance against these best practices and determine whether the job performance was lacking in quality somehow. Alternatively, the specification for best practices may need updating to include lessons learned from the job performance being graded.

Enterprises should not be trying to 'implement' any specific best practice, but adapting and adopting it to suit their specific requirements. In doing this, they may also draw upon other sources of good practice, such as public standards and frameworks, or the proprietary knowledge of individuals and other enterprises as illustrated in Figure 1.1.

Figure 1.1 Sources of good practice (Source: OGC ITIL Service Strategy ISBN 978-0-113310-45-6)



These sources have different characteristics:

- Public frameworks and standards have been validated across diverse environments.
- Knowledge of them is widely distributed among industry professionals.
- Training and certification programmes are publicly available.
- The acquisition of knowledge through the labour market is more readily achievable.

The proprietary knowledge of enterprises and individuals is usually customised for the local context and specific business needs of an organisation. It may only be available to a wider market under commercial terms and may be poorly documented and hard to extract. If embedded within individuals it may not be documented at all.

Enterprises deploying solutions based on good and best practice should, in theory, have an optimal and unique solution. Their solution may include ideas that

are gradually adopted by other enterprises and, having been widely accepted, eventually become recognised inputs to good and best practice.

THE ITIL FRAMEWORK

ITIL is not a standard in the formal sense but a framework which is a source of good practice in Service Management. The standard for IT Service Management (ITSM) is ISO/IEC 20000, which is aligned with, but not dependent on, ITIL.

As a formal standard, ISO/IEC 20000 defines a set of requirements against which an organisation can be independently audited and, if they satisfy those requirements, can be certificated to that effect. The requirements focus on what must be achieved rather than how that is done. ITIL provides guidance about how different aspects of the solution can be developed.

The International Organization for Standardization (ISO) and the Office of Government Commerce (OGC), with the cooperation of the independent user group *it*SMF (the IT Service Management Forum), have publicly committed to keeping the standard and the framework as aligned as possible. However, it has to be accepted that they serve different purposes and have their own development lifecycles so it is unlikely that they will ever be completely synchronised.

The ITIL Library has the following components:

- **ITIL Core:** Publications describing generic best practice that is applicable to all types of organisation that provide services to a business.
- **ITIL Complementary Guidance:** A set of publications with guidance specific to industry sectors, organisation types, operating models and technology architectures.

The objective of the ITIL Service Management framework is to provide guidance applicable to all types of organisations that provide IT services to businesses, irrespective of their size, complexity, or whether they are commercial service providers or internal divisions of a business. The framework shouldn't be bureaucratic or unwieldy provided it is used sensibly and in full recognition of the business needs of the specific enterprise.

ITIL-based solutions have been deployed successfully around the world for over 20 years. Over this time, the framework has evolved considerably. The original publications, of which there were over 40, tended to be single topic and function-based. The next iteration reduced the number of books considerably, taking a process-based view and concatenating topics together to reinforce the integrated nature of service management solutions. The latest iteration (commonly referred to as v3) now provides a broader, holistic Service Lifecycle approach.

The generic nature of ITIL is both a strength and a weakness. Since it is generic, it truly can be applied to any organisation of any size in any market sector and regardless of whether the service provider is internal to the business or a

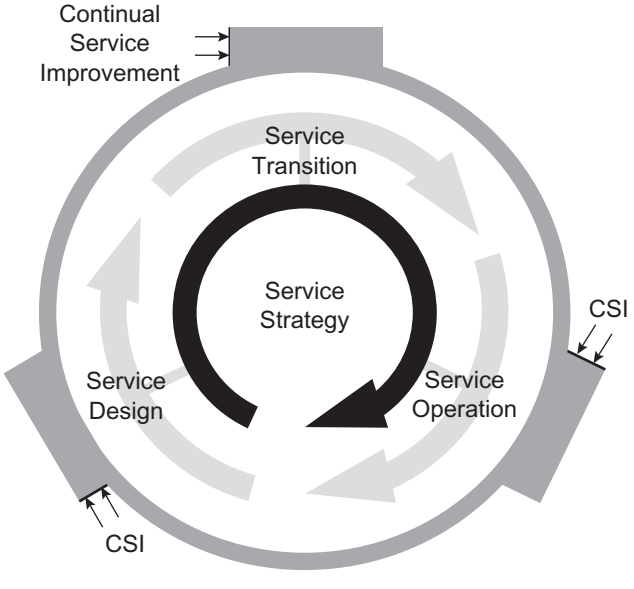
commercial enterprise. However, organisations have to adopt and adapt the guidance that it contains to their specific requirements, which in some cases requires considerable effort and commitment.

Unfortunately, much of the focus in learning programmes is on the specifics of terminology and process definitions included within the ITIL volumes, which means that individuals aren't always equipped to make the necessary decisions about how to implement key processes and functions. Organisations should not be seeking to 'implement ITIL', but to implement a service management solution based on ITIL that meets the needs of the organisation.

THE ITIL CORE

The Service Lifecycle is an approach to IT Service Management that emphasises the importance of coordination and control across the various functions, processes and systems necessary to manage the full lifecycle of IT services. The Service Management Lifecycle approach considers the strategy, design, transition, operation and continual improvement of IT services. The Service Lifecycle is described in a set of five publications within the ITIL Core set. Each of these publications covers a stage of the Service Lifecycle (see Figure 1.2) from the initial definition and analysis of business requirements in Service Strategy (SS) and Service Design (SD), through migration into the live environment within Service Transition (ST), to live operation and improvement in Service Operation (SO) and Continual Service Improvement (CSI). The term 'continual' is used in preference to 'continuous' to emphasise that this activity is not performed on a constant basis, but as a series of planned and controlled actions.

Figure 1.2 The Service Lifecycle (Source: OGC ITIL Service Strategy ISBN 978-0-113310-45-6)



Service Strategy is the hub around which everything revolves. Strategy drives all the decisions that are subsequently taken. Design, Transition and Operation are the more iterative cyclic activities. At all stages throughout the lifecycle, opportunities arise for improvement.

COMPLEMENTARY MATERIAL

Although the material in the Core is likely to remain fairly constant, Complementary material is likely to be more dynamic. Complementary material may take the form of books or web-based material and may be sourced from the wider industry, rather than from the Office of Government Commerce (OGC)/The Stationery Office (TSO).

Examples of such material are glossary of terms, process models, process templates, role descriptions, case studies, targeted overviews and study aids for passing examinations. These will typically be officially commissioned and published by TSO.

Other publications that focus on specific market sectors, techniques or technologies are more likely to be produced by organisations such as *it*SMF or by the vendor community.

RELATED MATERIAL

Apart from the ISO/IEC 20000 standard, ITIL is also complementary to many other standards, frameworks and approaches. No one of these items will provide everything that an enterprise will wish to use in developing and managing their business. The secret is to draw on them for their insight and guidance as appropriate. Among the many such complementary approaches are:

- **Balanced Scorecard:** A management tool developed by Dr Robert Kaplan and Dr David Norton. A balanced scorecard enables a Strategy to be broken down into Key Performance Indicators (KPIs). Performance against the KPIs is used to demonstrate how well the Strategy is being achieved. A balanced scorecard has four major areas, each of which are considered at different levels of detail throughout the organisation.
- **COBIT:** Control Objectives for Information and related Technology provides guidance and best practice for the management of IT Processes. COBIT is published by the IT Governance Institute.
- **CMMI-SVC:** Capability Maturity Model Integration is a process improvement approach that gives organisations the essential elements for effective process improvement. CMMI-SVC is a variant aimed at service establishment, management, and delivery.
- **EFQM:** The European Foundation for Quality Management is a framework for organisational management systems.
- **eSCM–SP:** eSourcing Capability Model for Service Providers is a framework to help IT service providers develop their IT Service Management Capabilities from a Service Sourcing perspective.

- **ISO 9000:** A generic quality management standard, with which ISO/IEC 20000 is aligned.
- **ISO/IEC 19770:** Software Asset Management standard, which is aligned with ISO/IEC 20000.
- **ISO/IEC 27001:** ISO Specification for Information Security Management. The corresponding Code of Practice is ISO/IEC 17799.
- **Lean:** a production practice centred around creating more value with less work.
- **PRINCE2:** The standard UK government methodology for project management.
- **SOX:** the Sarbannes–Oxley framework for corporate governance.
- **Six Sigma:** a business management strategy, initially implemented by Motorola, which today enjoys widespread application in many sectors of industry.

Each of these contributes something different, as can be surmised from the brief descriptions, whether it be as legislation to comply with, as a standard to aspire to or as a method of measuring success. Enterprises globally have developed total corporate solutions embracing many permutations of these approaches.

THE ITIL SERVICE MANAGEMENT MODEL

Whether services are being provided by an internal unit of the organisation or contracted to an external agency, all services should be driven solely by business needs and judged by the value that they provide to the organisation. Decision-making therefore rests with the business. Within this context, services must also reflect the defined strategies and policies of the service provider organisation, which is particularly significant for external providers.

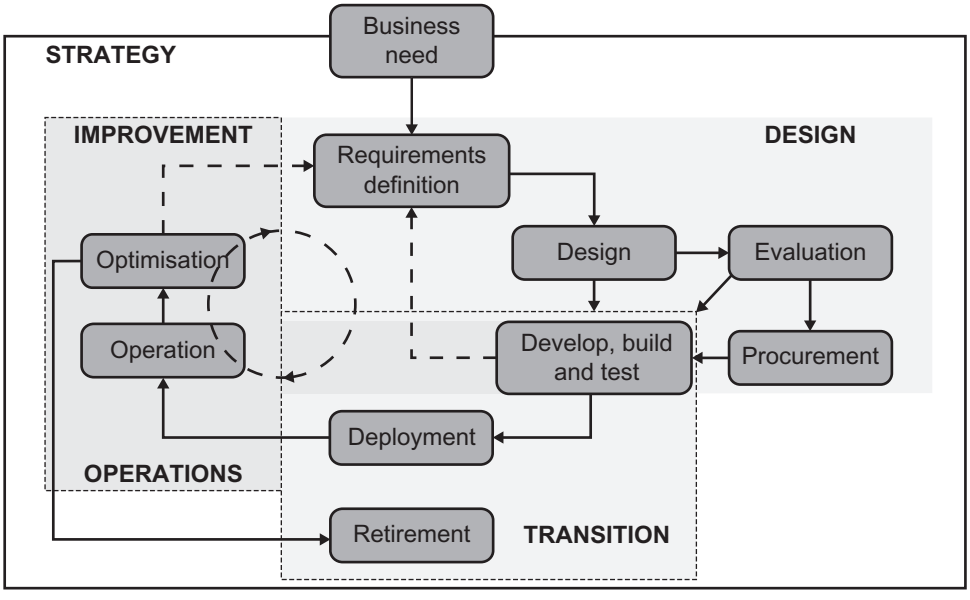
Figure 1.3 illustrates how the Service Lifecycle is initiated from a change in requirements at the business level. These new or changed requirements are identified and agreed at the Service Strategy stage and documented. Each of these 'packages' will have an associated defined set of business outcomes.

The package is passed to the Service Design stage where a service solution is produced, defining everything necessary to take this service through the remaining stages of the lifecycle. Solutions may be developed internally or consist of bought in components that are integrated internally.

The design definition is passed to the Service Transition stage, where the service is built, evaluated, tested and validated, and transitioned into the live environment, where it enters the live Service Operation stage. The transition phase is also responsible for supporting the service in its early life and the phasing out of any services that are no longer required.

Service Operation focuses on providing effective and efficient operational services to deliver the required business outcomes and value to the customer. This is where any value is actually delivered and measured.

Figure 1.3 Key activities of the Service Lifecycle stages



Continual Service Improvement identifies opportunities for improvement (which may arise anywhere within any of the lifecycle stages) based on measurement and reporting of the efficiency, effectiveness, cost-effectiveness and compliance of the services themselves, the technology that is in use and the Service Management processes used to manage these components. Although the measurements are taken during the operational phase, improvements may be identified for any phase of the lifecycle.

KEY CONCEPTS

Value

From the earlier definition of a service, it is clear that the primary focus is on delivering value to the service consumer. Value is created through providing the right service under the right conditions.

Customers value an IT service when they see a clear relationship between that IT service and the business value that they need to generate. In the past, both IT and business management have been very poor at understanding this link: IT has often known all about the costs of components, but not the cost of providing a service that the business understands, and the business has been unable to make value-based decisions about the worth of such solutions.

Value is created through two components:

- **Utility:** Value in the form of what the customer gets from the service. This will either be from providing new business lines or from the relaxation of

existing constraints on the customer's ability to achieve their desired outcomes. Utility is about what the product or service does, determining whether it is 'Fit for purpose'.

- **Warranty:** Value in the form of how this 'utility' is delivered to the customer. This is seen as the positive effect of the service being available when and where it is required, in sufficient capacity to meet the business needs, and being sufficiently reliable in terms of continuity and security for it to be depended on (i.e. it is 'Fit for use').

UTILITY

Functionality offered by a product or service to meet a particular need. Utility is often summarised as 'what it does'.

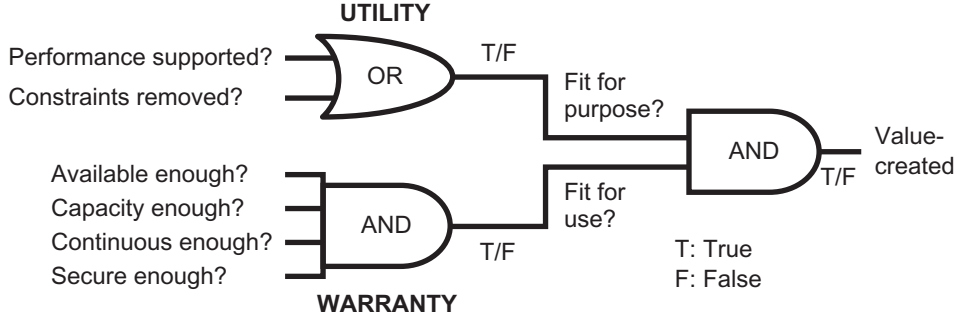
WARRANTY

A promise or guarantee that a product or service will meet its agreed requirements.

Neither Utility nor Warranty can deliver full value on its own. A product or service may do exactly what the customer requires, but if it performs poorly, or is unavailable, insecure or unreliable, it cannot deliver maximum value. Conversely, a service will not deliver value if it does not provide the functionality needed, even though it may be highly available, reliable and secure and offer high levels of performance.

Figure 1.4 shows that value is only created when both Utility and Warranty are satisfied. A service that seems potentially attractive on paper to a customer in terms of the Utility that it offers won't be perceived as providing real value if the way it is delivered is highly unreliable or it is delivered in an insecure manner. A customer's ability to realise value from an IT service is dependent on both the Utility associated with the service and the degree to which they can rely on the consistent delivery of that service (the service Warranty).

Figure 1.4 Utility and Warranty (Source: OGC ITIL Service Strategy ISBN 978-0-113310-45-6)



EXAMPLE

When ATMs were introduced, they removed the time constraint of customers being able to withdraw cash from their account only when the bank branch was open. Since their introduction, further functionality has been added (account balances, mini statements, bill payment etc.). These are all aspects of utility, but they are of course useless unless ATMs are sited in convenient locations, are kept topped up with cash and printer paper, have secure access controls and are reliable.

Internet banking offered new utility through additional functions (e.g. transfers and online account creation) as well as allowing the customer to do all these anytime, anywhere. Different security, capacity and availability aspects are required in order to ensure the functionality is provided.

Service assets

Service providers create value through using their assets in the form of resources and capabilities.

RESOURCES

A generic term that includes IT infrastructure, people, money or anything else that might help to deliver an IT service. Resources are considered to be assets of an organisation.

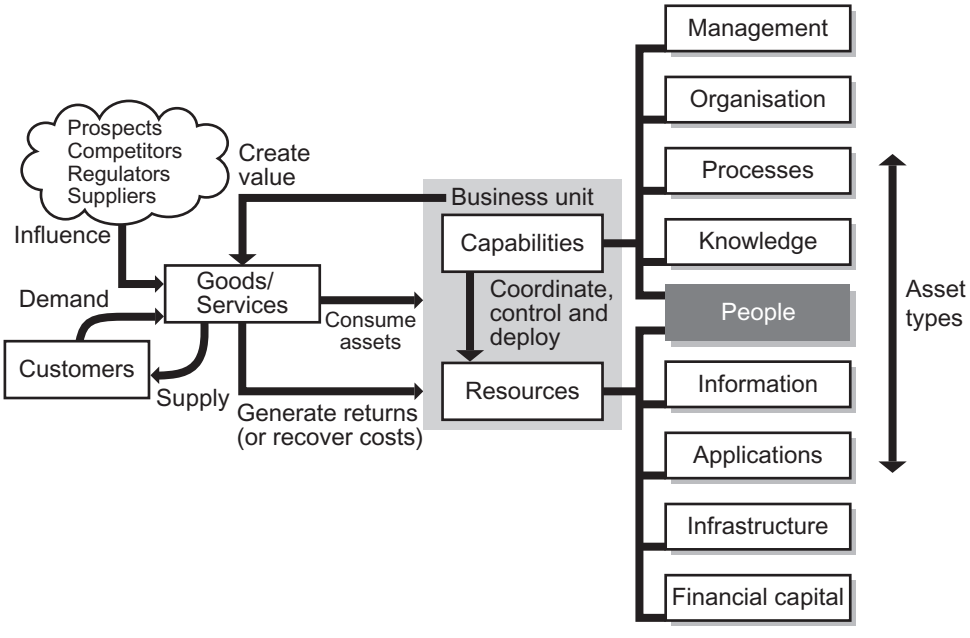
CAPABILITIES

The ability of an organisation, person, process, application, configuration item or IT service to carry out an activity. Capabilities are intangible assets of an organisation.

Figure 1.5 shows how an IT service provider uses its service assets in the form of resources and capabilities to create each service that it provides.

The key difference between resource assets and capability assets is that, typically, resources can be purchased in the marketplace while distinctive capabilities can only be developed over time. Capabilities reflect the knowledge and experience of the organisation and are used to transform physical resources into services. The distinctive capabilities of a service provider, often quite intangible, set it apart from its competitors, and enable it to attract and retain customers by offering unique value propositions.

Figure 1.5 Service delivery through service assets (Source: OGC ITIL Service Strategy ISBN 978-0-113310-45-6)



The business unit to which the service is provided will also have resources and capabilities that are harnessed to provide the end service to the customer. The integration between the service and the business unit's own assets may be very tight, making it hard to distinguish between the two, or it may be much more clearly separated.

Service Model

A Service Model describes how a service provider creates value for a given portfolio of customer contracts by connecting the demand for service from the assets of its customers with the service provider's service assets. It describes both the structure and the dynamics of the service:

- **Structure:** The particular service assets needed to deliver the service and the patterns in which they are configured.
- **Dynamics:** The activities, flow of resources, coordination, and interactions between customer and service provider assets (e.g. interaction between service users and service agents). Service dynamics include Patterns of Business Activity (PBAs), demand patterns, exceptions and variations.

A Service Model may include:

- process maps;
- workflow diagrams;
- queuing models;
- activity patterns.

Once defined, variants of a service model can be generated in order to tailor a service to a customer's specific needs.

Functions, Processes and Roles
The terms Function, Process and Role are often confused. This is not surprising since they are so intertwined. In addition, the way the words are used in ITIL is precise, and may be confused with the way these words are used in a more general context.

FUNCTION

A team or group of people and the tools they use to carry out one or more Processes or activities (e.g. the Service Desk or IT Operations).

In this context a Function is a structural part of an organisation (e.g. a division or a business unit) established to do specific things. For example, the Service Desk is a Function that is created to perform defined activities and produce specified outcomes. People within a function have defined roles that they perform to deliver the outcomes required. By their nature, functions are specialised and have their own disciplines, skills, performance measures and knowledge base. Functions perform activities that are elements of Processes. Individual Functions may perform an entire Process or, quite commonly, share Processes with other Functions.

PROCESS

A Process is a structured set of activities designed to accomplish a specific objective. A Process takes one or more defined inputs and turns them into defined outputs. A Process may include any of the Roles, responsibilities, tools and management controls required to reliably deliver the outputs. A Process may define policies, standards, guidelines, activities and work instructions if they are needed.

A process consists of a set of coordinated activities using resources and capabilities to produce an outcome, which, directly or indirectly, creates value for an external customer or stakeholder.

Every process consists of a number of elements, as shown in Figure 1.6. A process takes inputs and transforms them, using the appropriate enablers, to produce the required outputs in a closed-loop system that allows for feedback and improvement. Process control ensures that consistent repeatable processes are established, regulated and managed so that their performance is effective and efficient.

Process characteristics

A process transforms a prescribed set of data, information and knowledge into a desired outcome, using feedback as a learning mechanism for process improvement. Every process consists of a number of elements, as shown in Figure 1.6.

Figure 1.6 Process structure (Source: OGC ITIL Service Design ISBN 978-0-113310-47-0)

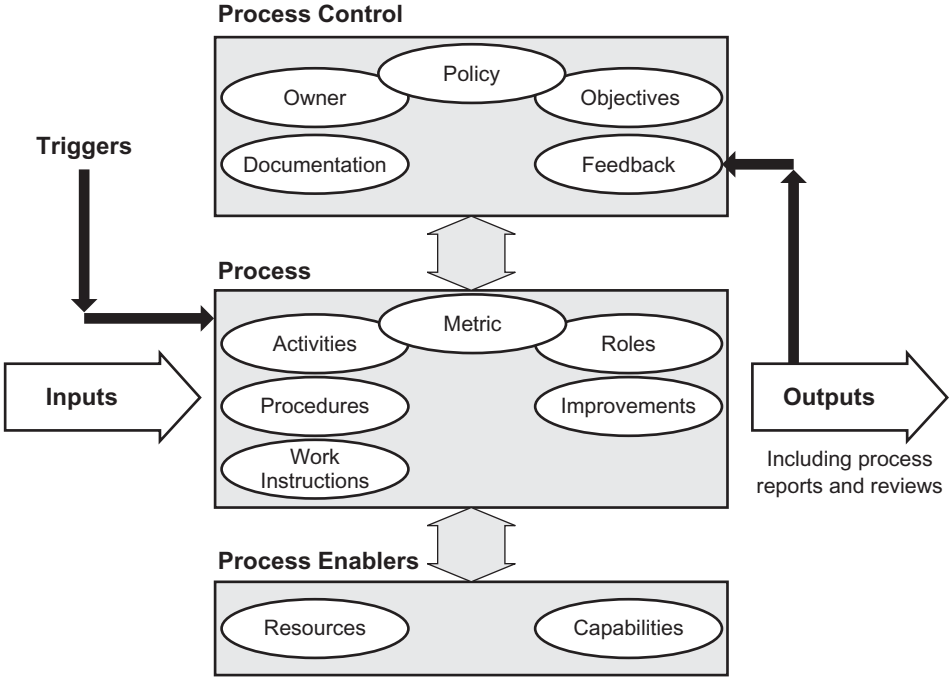


Figure 1.6 illustrates some of the basic features of a Process. First, a Process, initiated by an event or trigger, transforms inputs into outputs through a series of activities carried out by people or systems with specific roles with procedures or work instructions. It makes use of organisation resources and capabilities as process enablers. It is has an owner responsible for it. It has documented policy, terms of reference and objectives, and it is controlled to ensure it meets its specified purpose. The process is measured against defined metrics to determine how effectively it is operating and the results are fed back to drive continual improvement (this is what is known as a closed-loop feedback system).

In line with this, all processes will have certain characteristics:

- **Measurable:** We must be able to measure the Process. The performance of the Process is incredibly important. Managers will want to measure the cost and quality. People involved operationally with the Process are concerned with how long it takes and how easy it is to use.
- **Specific results:** A Process exists in order to deliver a specific result, which must be identifiable and countable.
- **Customers:** Each Process delivers its main results to a customer or stakeholder, who may be internal or external, and the results must meet their expectations.
- **Responds to a specific event:** Each Process, whether it is ongoing or iterative, will have a specific trigger.

EXAMPLE

Let's use a Process for booking theatre tickets by telephone as an example:

- **Measurement:** Management will want to ensure quality (e.g. bookings are correctly recorded, seats aren't 'double booked' etc.). The staff taking the bookings by phone may want a system that remembers details of customers from previous transactions, thus making it easier to use.
- **Results:** Each correct set of theatre tickets despatched on time or made available for collection might be the result.
- **Customer:** Customer expectations may be that the Process makes it easy to book tickets and that they are either received before they go to see the show or are available at the box office on arrival.
- **Trigger:** The customer telephone call.

Roles

ROLE

A set of responsibilities, activities and authorities granted to a person or team. A Role is defined in a Process. One person or team may have multiple roles (e.g. the roles of Configuration Manager and Change Manager may be carried out by a single person).

Therefore, a role describes what an individual actually does. Every organisation will define those Roles that it requires in order to perform the necessary tasks and will allocate individuals to perform those roles. The relationship between Roles and persons is a many-to-many one (i.e. an individual may perform more

than one role and a role may be performed by more than one person). Roles may or may not be related to job titles.

As stated earlier, there should be one role that is accountable for any specific task or process. ITIL advocates that two generic roles should be defined:

Process Owner – accountable for ensuring that all activities within a Process are undertaken with responsibility for:

- defining the process strategy;
- assisting with the design of the process;
- ensuring that process documentation is available and current, and that all staff are trained correctly;
- defining policies and standards to be followed;
- defining KPIs and auditing to ensure that the Process is being followed correctly and is effective and efficient;
- reviewing proposed enhancements and providing input to the Service Improvement Plan.

Service Owner – accountable to the customer for a particular service with responsibility for:

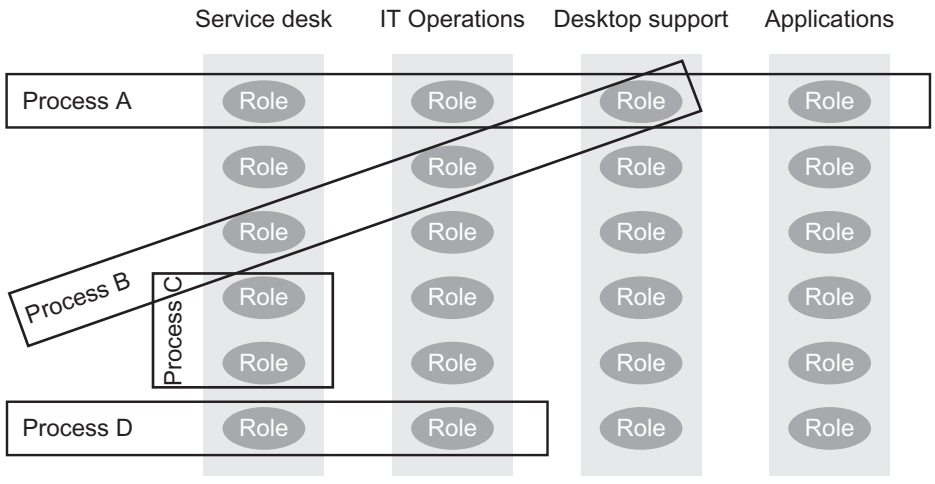
- acting as the prime customer contact for all service-related enquiries and issues, and as an escalation point for major incidents;
- representing the Service in CAB and customer meetings;
- participating in negotiating SLAs and OLAs, and ensuring the Service is correctly defined in the Service Catelogue;
- ensuring that the service is delivered as agreed (i.e. service levels are met);
- identifying opportunities for improving the service provided;
- ensuring that effective service monitoring is implemented.

One reason why people get confused about Processes and Functions is that it is common to give names to organisation units that are the same as the names of Processes. For example, Configuration Management is an SM Process, but many organisations will have a unit called Configuration Management with responsibility for the Configuration Management Process. It is important to recognise that organisation structures are a matter of choice, but irrespective of how the organisation is structured and what the elements are called, the Service Management Processes are not a matter of choice.

The interrelationship between Functions, Process and Roles

Figure 1.7 illustrates the typical interrelationship between the three entities. Processes can span one or more Functions and require activities to be performed by one or more Roles within any function. In fact, it is usually even more complex than this, since each Role may have a different type of engagement in any individual process.

Figure 1.7 Functions, Roles and Processes



Authority matrix
An authority matrix is often used within organisations to indicate specific roles and responsibilities in relation to Processes and activities.

The RACI model is an example of an authority matrix. It is used to map the Process activities to the Roles involved in their execution. The acronym RACI is derived from the distinct ways a Role can be involved in a Process.

Responsible	executes the process or activity	(does the work)
Accountable	has ownership of quality and the end result	(ultimate owner)
Consulted	provides input of knowledge and information	(provides assistance)
Informed	receives information about execution	(needs to know)

Within the RACI model, each activity must have a role identified as Accountable and Responsible, whereas Consulted and Informed are optional. There must be exactly one Accountable role for each activity.

Generic roles are normally used in the RACI model, but it is vitally important that the Role–Activity links it describes are mapped back to specific individuals within the organisation.

Separating the role involvement from the organisation allows flexibility in the application of Role–Activity relationships to the realities and constraints of organisational design:

- It recognises that the same Process (or activity) may be carried out by more than one organisational role or unit.
- It allows organisation design to change without impacting the underlying process model.

- It recognises constraints of geographically diverse organisations which may have to combine many responsibilities in fewer roles in smaller sites.
- It allows for complex organisations covering diverse businesses to adopt the same underlying process model without extensive adaptation.

ITIL Processes and Functions

Table 1.1 lists the ITIL Service Management Processes and Functions in alphabetical order, identifying the publication in which they are primarily defined, where significant further expansion is provided and the chapter in Section 3 that contains greater detail. Most Processes play a Role during each lifecycle stage, but only significant expansion references are included. The shaded Processes are not part of the Foundation syllabus and are not covered in detail in this book.

Table 1.1 ITIL v3 Service Management Processes and Functions

Service Management Process/Function	Core book	Further	Section 3
Seven-step Improvement Process	CSI		29
Access Management	SO		16
Application Management	SO		27
Availability Management	SD	CSI	14
Capacity Management	SD	SO, CSI	13
Change Management	ST		19
Demand Management	SS	SD	8
Evaluation	ST		
Event Management	SO		26
Financial Management	SS		7
Incident Management	SO	CSI	23
Information Security Management	SD	SO	16
IT Operations	SO		25
IT Service Continuity Management	SD	CSI	15
Knowledge Management	ST	CSI	17
Problem Management	SO	CSI	24

(Continued)

Table 1.1 *(Continued)*

Service Management Process/Function	Core book	Further	Section 3
Management of Organisational and Stakeholder Change	ST		
Release and Deployment Management	ST	SO	20
Request Fulfilment	SO		22
Service Asset and Configuration	ST	SO	18
Service Catalogue Management	SD	SS	10
Service Desk	SO		21
Service Level Management	SD	CSI	11
Service Measurement	CSI		30
Service Portfolio Management	SS	SD	9
Service Reporting	CSI		30
Service Validation and Testing	ST		
Strategy Generation	SS		
Supplier Management	SD		12
Technical Management	SO		28
Transition Planning and Support	ST		

TEST QUESTIONS FOR CHAPTER 1

CSI 09
SM 01, SM 02, SM 03, SM 04, SM 05
SL 08
PR 01, PR 03, PR 04, PR 05
A 9

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Dr Ernest Brewster is a long time champion of ITIL Service Management in a 30 year IT career. Richard Griffiths has been an ISEB examiner since 2000 and is a service management consultant. Aidan Lawes is one of the world's leading independent authorities on IT Service Management and co-authored the international standard ISO/IEC 20000. John Sansbury is a Senior ITIL Examiner, a Fellow of BCS and of the Institute of Service Management.

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