OPERATIONAL SUPPORT AND ANALYSIS
A Guide for ITIL® V3 Exam Candidates
John Sansbury
OPERATIONAL SUPPORT AND ANALYSIS
A Guide for ITIL® V3 Intermediate Exam Candidates
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BCS The Chartered Institute for IT,
First Floor, Block D,
North Star House, North Star Avenue,
Swindon, SN2 1FA, United Kingdom.
T +44 (0) 1793 417 424
F +44 (0) 1793 417 444
www.bcs.org/contactus
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Since John Sansbury’s career started in IT Operations in the 1970s, he has shunned the technical aspects of IT, partly because he thinks that it is not very exciting 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 Electronics 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 since 1997, firstly with Compass Management Consulting and now with Infrassistance Consulting, John works with organisations across the world to analyse and improve their IT processes and deliver increased stakeholder value. He has developed particular expertise in Service Desks and Call Centres, describing them as ‘The eyes and ears of the supplier organisation’ and recognising and improving their ability to positively influence customer perception and operational performance.

John has relatively recently become an ITIL® trainer where his approach is to give his pupils an understanding of the subject rather than simply force-feeding the concepts into their heads. He does this by constantly relating the theory to the practice and in particular the situation in his pupils’ own organisations, a key principle incorporated into this book.

John has also practised as an ITIL Examiner since 1996 in which capacity he is one of the question setters for the OSA Intermediate examination.


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# ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>AM</td>
<td>Availability Management</td>
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<tr>
<td>CI</td>
<td>Configuration Item</td>
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<td>CMS</td>
<td>Configuration Management System</td>
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<td>CSF</td>
<td>Critical Success Factor</td>
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<td>CSI</td>
<td>Continual Service Improvement</td>
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<td>ELS</td>
<td>Early Life Support</td>
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<td>ISM</td>
<td>Information Security Management</td>
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<td>Information Security Management System</td>
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<td>ISO</td>
<td>International Organization for Standardization</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>IT Infrastructure Library</td>
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<td>ITSM</td>
<td>IT Service Management</td>
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<tr>
<td>itSMF</td>
<td>IT Service Management Forum</td>
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<td>KEDB</td>
<td>Known Error Database</td>
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<td>KPI</td>
<td>Key Performance Indicator</td>
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<td>OGC</td>
<td>Office of Government Commerce</td>
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<td>OLA</td>
<td>Operational Level Agreement</td>
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<td>PIR</td>
<td>Post-Implementation Review</td>
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<tr>
<td>RACI</td>
<td>An example of an authority matrix: Responsible, Accountable, Consulted, Informed</td>
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<td>RCA</td>
<td>Root Cause Analysis</td>
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<td>RFC</td>
<td>Request for Change</td>
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<td>ROI</td>
<td>Return on Investment</td>
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<td>SACM</td>
<td>Service Asset and Configuration Management</td>
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<td>SD</td>
<td>Service Design</td>
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<tr>
<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>SDP</td>
<td>Service Design Package</td>
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<td>SIP</td>
<td>Service Improvement Plan</td>
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<td>SKMS</td>
<td>Service Knowledge Management System</td>
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<td>SLA</td>
<td>Service Level Agreement</td>
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<td>SLM</td>
<td>Service Level Management</td>
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<td>SLR</td>
<td>Service Level Requirement</td>
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<td>SO</td>
<td>Service Operation</td>
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<td>SOR</td>
<td>Statement of Requirements</td>
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<td>SPM</td>
<td>Service Portfolio Management</td>
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<td>SS</td>
<td>Service Strategy</td>
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<td>ST</td>
<td>Service Transition</td>
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<tr>
<td>TCO</td>
<td>Total Cost of Ownership</td>
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<td>UC</td>
<td>Underpinning Contract</td>
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GLOSSARY†

Glossary definitions here and within the chapters are from ITIL publications. © Crown copyright material is reproduced with the permission of the Controller of HMSO and Queen’s Printer for Scotland.

**Accounting**  The process responsible for identifying actual Costs of delivering IT Services, comparing these with budgeted Costs, and managing variance from the Budget.

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

**Best Practice**  The proven Activities or Processes that have been successfully used by multiple organisations. ITIL is an example of Best Practice.

**Budget**  A list of all the money an organisation or business unit plans to receive, and plans to pay out, over specified period of time.

**Budgeting**  The Activity of predicting and controlling the spending of money. Budgeting consists of a periodic negotiation cycle to set future Budgets (usually annual) and the day-to-day monitoring and adjusting of current Budgets.

**Business Case**  A justification for a significant item of expenditure. It includes information about Costs, benefits, options, risks and possible problems.

**Business Relationship Management**  The Process or Function responsible for maintaining a relationship with the business. Business Relationship Management usually includes:

- managing personal relationships with Business Managers;
- providing input to Service Portfolio Management;
- ensuring that the IT Service Provider is satisfying the business needs of the customers.

This Process has strong links with Service Level Management.

**Business Service Management**  The ongoing practice of governing, monitoring and reporting on IT and the Business Service it impacts.

**Capabilities**  The abilities 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 (CI) 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 (CMS) 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 Service Level Agreements (SLAs).

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

Configuration Management System (CMS) A 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 employers, 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 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).

Contract A legally binding agreement between two or more parties.

Cost The amount of money spent on a specific Activity, IT Service or business unit. Costs consist of real cost (money), notional cost (such as people’s time) and depreciation.

Cost–Benefit Analysis An Activity that analyses and compares the costs and the benefits involved in one or more alternative courses of action.

Cost Effectiveness A measure of the balance between the effectiveness and the Cost of a Service, Process or Activity. A cost-effective process is one that achieves its objectives at minimum cost.

Critical Success Factor Something that must happen if a Process, project, plan or IT Service is to succeed. Key Performance Indicators (KPIs) are used to measure the achievement of each Critical Success Factor. For example, a Critical Success Factor of ‘protect IT Services when making changes’ could be measured by KPIs such as ‘percentage reduction of unsuccessful changes’, ‘percentage reduction in changes causing Incidents’ etc.

Definitive Media Library (DML) 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.

**Demand Management**  Demand Management covers Activities that understand and influence customer demand for Services and the provision of capacity to meet these demands. At a strategic level Demand Management can involve analysis of Patterns of Business Activity and user profile. At a tactical level it can involve use of Differential Charging to encourage customers to use IT Services at less busy times.

**Deployment**  The Activity responsible for the movement of new or changed hardware, software, documentation, process etc. to the live environment.

**Differential Charging**  A technique that is used to support Demand Management by charging different amounts for the same IT Service Function at different times.

**Escalation**  The term used to describe the act of assigning or referring an Incident record to another individual, team or group. ‘Functional escalation’ refers to the assignment of a record to a specialist technical team (or individual) because the current assignee group cannot make any further progress in fixing the Incident. ‘Hierarchic escalation’ refers to the assignment of a record to a higher level of management, perhaps because of the severity of the Incident or the need to issue a formal communication such as advice of a Service Level breach.

**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 the 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.

**External Service Provider**  An IT Service Provider that is part of a different organisation to its customer. An IT Service Provider may have both internal customers and external customers.

**Financial Management**  Financial Management consists of the Function and Processes responsible for managing an IT Service Provider’s Budgeting, Accounting and charging requirements.

**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).

**Governance**  Ensures that policies and strategy are actually implemented, and that required processes are correctly followed. Governance includes defining roles
and responsibilities, measuring and reporting, and taking actions to resolve any issues identified.

**Incident**  An unplanned interruption to an IT Service or reduction in the quality of an IT Service. Failure of a Configuration Item that has not yet impacted service is also an Incident.

**Indirect Cost**  That part of the Cost of producing an IT Service that cannot be allocated in full to a specific customer. For example, the cost of providing shared servers or software licences. An Indirect Cost is also known as an overhead.

**ITIL**  The IT infrastructure library (ITIL) is a set of best practice guidance for IT Service Management. ITIL is owned by the Office of Government Commerce (OGC) and consists of a series of publications giving guidance on the provision of quality IT Services, and on the processes and facilities needed to support them.

**IT Service**  A Service provided to one or more customers by an IT Service Provider. An IT Service is based on the use of information technology and supports the customer's business processes. An IT Service is made up from a combination of people, processes and information technology and should be defined in a Service Level Agreement.

**IT Service Management**  The implementation and management of quality IT Services that meet the needs of the business. IT Service Management is performed by IT Service Providers through an appropriate mix of people, processes and information technology.

**IT Service Provider**  A Service Provider that provides IT Services to internal customers or external customers.

**itSMF**  The IT Service Management forum which operates as the independent ITIL user group worldwide.

**Key Performance Indicator**  A metric that is used to help manage a Process, IT Service or an Activity. Many metrics may be measured but only the most important metrics are defined as Key Performance Indicators (KPIs) and are used to manage and report actively on the Process, IT Service or Activity. 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.

**Lifecycle**  The Lifecycle is made up of the various stages in the life of an IT Service, Configuration Item, Incident, Problem, change etc. The Lifecycle defines the categories for status and the status transitions that are permitted. For example:

- The lifecycle of an application includes requirements, design, build, deploy, operate and optimise.
- The expanded Incident lifecycle includes detect, respond, diagnose, repair, recover and restore.
- The lifecycle of a server may include ordered, received, in test, live, disposed of etc.

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

**Objective**  The defined purpose or aim of a Process, an Activity or an organisation as a whole. Objectives are usually expressed as measurable targets. The term Objective is also informally used to mean a requirement.

**Office of Government Commerce**  The Office of Government Commerce owns the ITIL brand (copyright and trademark). Office of Government Commerce is a UK Government Department that supports the delivery of the government’s procurement agenda through its work in collaborative procurement and in raising levels of procurement skills and capability within Departments. It also provides support for complex public sector projects.

**Operational Cost**  Cost resulting from running IT Services. These are often repeating payments. For example, staff costs, hardware maintenance and electricity (also known as current expenditure or revenue expenditure).

**Operational Level Agreement (OLA)**  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. For example, there could be an Operational Level Agreement:

- between the IT Service Provider and a procurement department to obtain in agreed times;
- between the Service Desk and a support group to provide Incident resolution in agreed times.

**Pattern of Business Activity (PBA)**  A PBA defines the dynamics of a business and includes interactions with customers, suppliers, partners and other stakeholders.

**Practice**  A way of working or a way in which work must be done. Practices can include Activities, Processes, Functions, standards and guidelines.

**Pricing**  The Activity for establishing how much customers will be charged.

**Problem**  The cause of one or more Incidents.

**Process**  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.

**Relationship**  A connection or interaction between two people or things. In Business Relationship Management it is the interaction between the IT Service Provider and the business.

**Release**  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.

**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.

**Return on Investment (ROI)**  A measurement of the expected benefit of an investment. In the simplest sense it is the net profit of an investment divided by the net worth of the assets invested in that investment.

**Risk**  Risk is defined as uncertainty of outcome, whether positive opportunity or negative threat. A Risk is 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).

**Scope**  The boundary or extent to which a Process, procedure, certification, contract etc. applies. For example, the scope of the Change Management Process may include all live IT Services and related Configuration Items, the scope of an ISO/IEC 20000 certificate may include all IT Services delivered out of a named data centre.

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

**Service Catalogue**  A database or a structured document with information about all live IT Services, including those available for Deployment. The Service Catalogue is the only part of the Service Portfolio published to customers, and is used to support the sale and delivery of IT Services. The Service Catalogue includes information about deliverables, prices, contact points, ordering and request processes.

**Service Change**  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 (SDP)  (Service Design) documents(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 Hours  An agreed time period when a particular IT Service should be available. For example, 'Monday to Friday 8 a.m. to 5 p.m. except public holidays'. Service hours should be defined in a Service Level Agreement.

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

Service Level  A measured and reported achievement against one or more Service Level Targets. The term Service Level is sometimes used informally to mean Service Level Target.

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 Management  The Process responsible for negotiating Service Level Agreements, and ensuring that these Service Level Agreements are met. Service Level Management is responsible for ensuring that all IT Service Management Processes, Operational Level Agreements and Underpinning Contracts are appropriate for the agreed Service Level Targets. Service Level Management monitors and reports on Service Levels, and holds regular reviews with customers.

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

Service Level Requirement  A customer requirement for an aspect of an IT Service. Service Level Requirements (SLRs) are based on business objectives and used to negotiate agreed Service Level Targets.

Service Level Target  A commitment that is documented in a Service Level Agreement. Service Level Targets are based on Service Level Requirements, and are needed to ensure that the IT Service Design is fit for purpose. Service Level Targets should be SMART, and are usually based on Key Performance Indicators.

Service Management  A set of specialised organisational capabilities for providing value to customers in the form of Services.

Service Management Lifecycle  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, operations and continuous service improvement of IT Services.

**Service Manager** A manager who is responsible for managing the end-to-end lifecycle of one or more IT Services. The term Service Manager is also used to mean any manager within the IT Service Provider. The term Service Manager is most commonly used to refer to a Business Relationship Manager, a Process Manager, an Account Manager or a senior manager with responsibility for IT Services overall.

**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 Portfolio Management** A dynamic method for governing investments in Service Management across the enterprise and managing them for value.

**Service Reporting** The Process responsible for producing and delivering reports of achievement and trends against Service Levels. Service Reporting should agree the format, content and frequency of reports with customers.

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

**SMART** An acronym for helping to remember that targets in Service Level Agreements and project plans should be Specific, Measurable, Achievable, Relevant and Timely.

**Standard Change** A pre-approved change that is low risk, relatively common and follows a procedure or work instruction.

**Strategic Asset** 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. Examples of Supplier include commodity hardware and software vendors, network and telecom providers and outsourcing organisations.

**Supplier and Contract Database** A database or structured document used to manage supplier contracts throughout their lifecycle. The Supplier and Contract Database contains the key attributes of all contracts with Suppliers, and should be part of the Service Knowledge Management System.

**Supplier Management** The Process responsible for ensuring that all contracts with Suppliers support the needs of the business, and that all Suppliers meet their contractual commitments.
Supply Chain  A Supply Chain is made up of the activities in a Value Chain that are carried out by Suppliers. A Supply Chain typically involves multiple Suppliers, each adding value to the product or service.

Support Hours  The times or hours when support is available to the users. Typically these are the hours when the Service Desk is available. Support hours should be defined in a Service Level Agreement, and may be different from service hours. For example, service hours may be 24 hours a day, but support hours may be 7 a.m. to 7 p.m.

Third Party  A person, group or business that is not part of the Service Level Agreement for an IT Service, but is required to ensure successful delivery of that IT Service. Examples of third parties include a software supplier, a hardware maintenance company or a facilities department. Requirements for third parties are typically specified in Underpinning Contracts or Operational Level Agreements.

Total Cost of Ownership  A methodology used to help make investment decisions. Total Cost of Ownership assesses the full Lifecycle cost of owning a Configuration Item, not just the initial cost or purchase price.

Underpinning Contract  A contract between an IT Service Provider and a third party. The third party provides goods or services that support delivery of an IT Service to a customer. The Underpinning Contract defines targets and responsibilities that are required to meet agreed Service Level Targets in a Service Level Agreement.

Utility  The functionality offered by a product or service to meet a particular need. Utility is often summarised as ‘what it does’.

Value Chain  A sequence of processes that creates a product or service that is of value to a customer. Each step of the sequence builds on the previous steps and contributes to the overall product or service.

Value for Money  An informal measure of Cost Effectiveness. Value for Money is often based on a comparison with the cost of alternatives.

Value Network  A web of relationships that generates tangible and intangible value through complex dynamic exchanges through two or more organisations.

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

www.bcs.org/iseb Information Systems Examination Board, BCS, The Chartered Institute for IT
www.efqm.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.itsmfi.org itSMF International
www.ogc.gov.uk Office of Government Commerce
www.sei.cmu.edu/cmmi/ Carnegie Mellon University Capability Maturity Model
PREFACE

This book has unique value for both the person studying for the OSA ITIL examination and those looking to gain a particular understanding of the OSA processes because, to the best of my knowledge, no other book explains these subjects. Rather, they simply lift the relevant sections from the main books, which can make it hard to understand the context and certainly makes it no easier to understand the principles.

The value of the five core books is that they act as the definitive source of good practice in Service Management, but, in so doing, they make it challenging for the Intermediate level candidate or someone looking for a condensed view of the processes to gain the insight necessary for those purposes. I have addressed this in four key ways:

- By explaining the concepts in an easy-to-understand, non-technical way.
- By providing real-life examples from my work as a practitioner and consultant to help the reader understand and relate to the concepts.
- By interpreting the text from the core books so that when this text is read together with and related to that of the core books, the reader will gain a greater understanding of the subject matter.
- By focusing on the level of knowledge needed for the Intermediate certificate, that is, more than that required for Foundation but less than needed for the Manager's/Expert level, based on my experience on setting the questions at these levels in my role as an Examiner.

The examination syllabus often includes references from two or more books and several different sections from those books in the same topic. I have blended these into a seamless explanation of the topic to show the reader the relevance of combining these.

In defining good Service Management practice applicable to all organisations, ITIL can often only offer generic advice rather than recommend specific actions and measures. Accordingly, I make frequent reference in this book to the fact that the adoption of the guidance into real-life situations is often at the discretion of the individual organisation.

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.
This section introduces the concepts and terminology of the Service Lifecycle and discusses the Role of Operational Support and Analysis within the Lifecycle.

Service Management is all about ensuring that the Services provided are aligned to the needs of the business areas and that these Services are supported throughout their operation. By using the Service Lifecycle and a number of Processes, Service Management is able to fulfil this Role.
Main book references: SS 2.1, SO 2.1

It is important to understand exactly what Service Management is and how it is used by organisations to deliver and manage their 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 are the drivers for purchasing the Service in the first place. They are what the customer wants to receive or achieve. For example, when ordering an item from an online seller, the customer wants to receive a specific item at an agreed price within certain timescales. From the customer’s point of view, the value of a particular Service is determined by how well the outcomes are delivered.

The specific costs and risks of the Service are not owned by the customer. The customer is gaining value by achieving their desired outcomes while the costs and risks are held by the provider of the Service (i.e. all the infrastructure, people and Processes required to deliver the Service). The customer does not own the costs and risks of providing the Service; they just want their outcomes and value.

Within organisations, Services are sourced from internal areas (e.g. IT, Human Resources or Facilities Management). These areas have the necessary knowledge and experience to own and manage the costs and risks specific to their areas.

Service Management brings together Processes and Functions to deliver Service.
Service Management as a professional practice strives to improve the levels of performance in managing Services. This step improvement over time has led to the build up of Service Management intellectual capital and the emergence of best practice.

The customers of a Service are concerned with outcomes and value while Service Management is there to coordinate and manage Resources in order to deliver those outcomes and value. The Resources are coordinated and managed through the utilisation of Processes and Functions.

A simple everyday transaction or Service would be obtaining money from a bank. The customer is only interested in achieving their outcome of obtaining money. The speed and ease of the transaction will provide the value. The availability of ATMs (Automated Teller Machines) allows customers to access money. As customers, their sole interest is in the money being dispensed quickly and securely, they are not interested in the mechanics of how the money is dispensed or the infrastructure that allows it. In the short space of time that the customer is using the ATM (and the shorter the better for the customer (value)), any number of network links and database access activities are being utilised. The ATM has been purchased, located and loaded with money; again this is not what the customer is interested in. While the customer concentrates on outcomes and value, it is Service Management that pulls everything together to facilitate the delivery of the Service. Service Management is responsible for managing and coordinating all the Processes and all the internal and external areas of the bank, in this example, that allow or enable the Service to be delivered.

The specialised organisational capabilities in the definition of Service Management are Processes, Activities, Functions and Roles utilised by a Service Provider when delivering a Service. It is not just the Processes, Activities, Functions and Roles, but also the management and organisational structures that are put in place around them.

ITIL is a framework rather than a standard and is a source of good Service Management practice. For organisations that wish to acquire certification, then ISO/IEC 20000 is the appropriate standard to be assessed and audited against. ISO/IEC 20000 is the standard of IT Service Management (ITSM) and is aligned to ITIL.

**IT SERVICE MANAGEMENT**

IT Service Management is the implementation and management of quality IT Services that meet the needs of the business. IT Service Management is performed by IT Service Providers through an appropriate mix of people, Process and information technology.
2 THE CONCEPT OF SERVICE, ITS VALUE PROPOSITION AND COMPOSITION

Main book references: SS 2.2, SO 2.2

Services deliver value to customers. Value is created by providing the right Service under the right conditions.

Customers or business areas will want outcomes but will not want the associated costs and risks of ownership. For example, a self-service till within a supermarket will require network connectivity to allow sales to be recorded and stock to be reordered. The business area responsible for the till will not want all the costs, risks and management issues of maintaining the network. They are content to take this as a Service from a Service Provider (which could be internal, external or a shared service unit). Such a Service Provider will have the necessary network knowledge and skills to deliver the Service. These are not skills that the business area wants to obtain and maintain. The business area agrees to pay for the network service subject to specific terms and conditions. In this way Resources are utilised effectively. If individual business areas were all responsible for their networks, there would be considerable waste through duplication and any number of other issues including lack of compatibility, lack of investment, lack of up-to-date knowledge, inability to leverage economies of scale etc.

From the viewpoint of the customer, value is made up of two elements. These are Utility (or fitness for purpose) and Warranty (or fitness for use).

UTILITY

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

Utility is value in the sense of what the customer gets from the Service. This may be by allowing or facilitating tasks to be performed better in relation to the outcome desired by the business area or by reducing or removing constraints on the business area’s ability to achieve their desired outcomes. Utility centres on what the Service actually does, which determines whether it is fit for purpose.
WARRANTY

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

Warranty is value in the sense of how the Utility is delivered to the customer. The determination of whether a Service is fit for use (i.e. the positive effect of the Service being available when and where it is required) takes into account whether there is sufficient capacity and whether the Service is dependable in terms of security and continuity for it to be relied on.

Utility and Warranty have to be viewed together in that neither of them can deliver full value on their own. Figure 2.1 illustrates that value is only created when both Utility and Warranty are satisfied.

Figure 2.1 Logic of value creation through Services [Source: OGC ITIL Service Strategy ISBN 978-0-113310-45-6]

It may be that a Service does exactly what the customer or business area wants (Utility), but if the Service is unreliable or lacks the necessary security or availability levels (Warranty), then it cannot deliver maximum value. Conversely, a high availability, highly secure and highly reliable Service that does not actually do what the customer or business area requires will again not deliver maximum value. Customers or business areas can only derive maximum value from a Service if both Utility and Warranty are satisfied.
3 THE FUNCTIONS AND PROCESSES ACROSS THE LIFECYCLE

Main book references: SS 2.6, SO 2.3

The terms ‘Function’ and ‘Process’ are important within ITIL. ITIL contains Processes or sets of Activities to achieve specific Objectives, for example the Objective of Incident Management is to restore Service with the minimum of adverse impact as quickly as possible. The individuals who carry out this Process are part of a team (i.e. the Service Desk). The Service Desk is a Function.

**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.

**FUNCTION**

A Function is 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).

A Function is a structural part or unit of an organisation. Functions are set up to carry out particular types of work and to be responsible for certain specific outcomes. They have service assets in order to enable them to achieve their designated outcomes. These service assets take the form of Resources and Capabilities. Resources are allocated to Functions and Capabilities are built up over time.

Functions are specialised and have their own skills and knowledge base. They carry out Activities that are parts of Processes. They may carry out a whole Process, but often will share Processes with other Functions. Where this happens, it is important that responsibilities are clear and that good communication channels are in place. Coordination between Functions is a key part of organisational design.

Processes are made up of a set of coordinated Activities using Resources and Capabilities to arrive at an outcome. These Activities create value (directly or indirectly) for a customer.
The Process structure diagram (Figure 3.1) shows how a Process is made up of a number of elements. A Process receives inputs and transforms them into defined outputs by using various enablers. These enablers are the Capabilities and Resources. The outputs are produced in a ‘closed loop’, which allows for feedback and then improvement. The Process control elements are there to ensure that the Process is consistent and repeatable. Process control also ensures that the Process is managed effectively and efficiently.

Figure 3.1 The generic process elements (Source: OGC ITIL Service Design ISBN 978-0-113310-47-0)

A Process is initiated by a trigger or an Event. It then transforms inputs into outputs via a series of Activities undertaken by systems or people. These Activities have documented work instructions or procedures while the people involved have designated roles. Every Process has an owner responsible for it. The Process control element in Figure 3.1 gives the governance and control required to ensure that the Process does what it is supposed to do. This is also helped by the existence of documented Objectives, policy and terms of reference. Metrics allow the Process to be measured in terms of cost and quality and allow for feedback into the ‘loop’.

All Processes have certain characteristics:

- **Responds to a specific trigger**: All Processes have a specific trigger. It does not matter whether a Process is continual or whether it builds over time, there will always be a specific trigger.
• **Specific results:** The Process is there to produce a designated result that needs to be identifiable.

• **Customers:** Each Process delivers output(s) to a customer who will have expectations that need to be met. Customers may be internal or external to the organisation.

• **Measurable:** Processes need to be able to be measured in terms of cost and quality. The robust measurement of Process performance is the starting point for Process improvement Activities.
4 THE ROLE OF PROCESSES IN THE SERVICE LIFECYCLE

Main book references: SS 2.6.2, 2.6.3

Service Management Processes are applied across the Service Lifecycle. Service Strategy (SS), Service Design (SD), Service Transition (ST), Service Operation (SO) and Continual Service Improvement (CSI) all have clearly defined Processes.

SERVICE MANAGEMENT LIFECYCLE

The Service Management 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 continuous improvement of IT Services.

A lifecycle is a representation of the various stages a service or component goes through. It also applies to Incidents, Problems and Changes. The lifecycle approach is a powerful way of viewing a Service.

LIFECYCLE

The lifecycle represents various stages in the life of an IT Service, Configuration Item, Incident, Problem, Change etc. The lifecycle defines the categories for status and the status transitions that are permitted. For example:

- The lifecycle of an application includes requirements, design, build, deploy, operate, optimise.
- The expanded Incident lifecycle includes detect, respond, diagnose, repair, recover, restore.
- The lifecycle of a server may include ordered, received, in test, live, disposed etc.

The Service Lifecycle is initiated from a change in business requirements. Once identified, these new or changed requirements are agreed and documented at the Service Strategy stage of the Lifecycle. They are documented as packages, each with a specified set of business outcomes. Service Design takes the package from Service Strategy and produces a service solution. This service solution defines
and sets out all that will be needed to take the service or service improvement all the way through the rest of the Service Lifecycle. The solution(s) may be internally developed, bought in and configured internally or a combination of the two.

The output from Service Design is a design definition that is passed to the Service Transition phase of the Lifecycle. Here the service or service improvement is built, evaluated, tested and the testing validated prior to being transitioned into the live environment. Once in the live environment it is in the Service Operation phase, although Service Transition will still be involved in Early Life Support (ELS). Service Operation is where the value is actually delivered and measured because operational services are provided to produce the required business outcomes.

Opportunities for improvement may be identified at any stage in the Lifecycle. Continual Service Improvement uses the efficiency, effectiveness and cost-effectiveness measurement and reporting to highlight areas for improvement. These measurements and reporting are generated in the Service Operation phase; however, improvement may be identified as required in any of the earlier stages.

A lifecycle approach demands specialisation and coordination which are facilitated by feedback and control. Figure 4.1 illustrates the logical flow through Strategy, Design, Transition, Operation and Continual Improvement but also shows the feedback and control points.

**Figure 4.1** Service Management Processes are applied across the Service Lifecycle

There is an interrelationship between Functions, Processes and Roles throughout the Service Lifecycle. Processes can cut across one or more Functions and necessitate Activities to be carried out by one or more Roles within any Function.
5  HOW SERVICE MANAGEMENT CREATES BUSINESS VALUE

Main book references: SS 3.1, ST 2.4.3, SO 2.4.3, CSI 3.7.2

There are a number of ways in which Service Management creates business value. Each stage of the Service Lifecycle provides value to the business. It is through Service Operation where the value is actually seen. This value, observed in Service Operation, would have been modelled in Service Strategy. Service Design and Transition would have designed, tested and validated the cost of the service, while Continual Service Improvement would have identified measures and methods for optimising the performance of the Service.

Service Management creates business value through:

- **improved quality of service**: quality is designed into Services and this follows through the rest of the Service Lifecycle;
- **improved consistency of service**: consistent, repeatable Processes generate consistent Services;
- **improved effectiveness of IT Processes**: the Processes work together in a defined and coordinated framework;
- **improved availability of service**: this is the most obvious aspect of Service to customers and users;
- **improved continuity of service**: the Services will continue to support the business through disruptions and failures;
- **improved security of service**: the usage of Services is authorised and accountable;
- **improved service alignment**: the business needs are not lost as a Service progresses through the Lifecycle
- **improved IT governance**: a Process-driven approach enables controls to be instigated;
- **improved information**: the measurement and metrics designed in Service Design in response to business requirements and delivered in Service Operation provide information and triggers for Continual Service Improvement;
- **improved decision making**: the availability of improved information enables decisions to be made in the light of actual performance;
more effective service performance: quality and cost-effectiveness are designed into the Processes – Financial, Capacity, Continuity and Availability are all taken into account;

reduced total cost of ownership (TCO): costs are understood and controlled throughout the Lifecycle;

easier implementation of new services or changed services: an integrated approach with clear Processes, Roles and responsibilities.
HOW OPERATIONAL SUPPORT AND ANALYSIS SUPPORTS THE SERVICE LIFECYCLE

Main book references: SO 2.2, 2.4

The Operational Support and Analysis Processes and Functions all support the Service Lifecycle. The value added by them cannot really be viewed in isolation because the real value will only be generated as they interface with other Processes through the Lifecycle.

- **Event Management:** Perhaps the most important lifecycle benefit of Event Management is its contribution to Continual Service Improvement by providing information on Activities that could compromise Services and thereby help to limit the occurrence and impact of Incidents. As an information-providing Process, it can also help to improve operational efficiency and minimise costs by providing information to Availability and Capacity Management.

- **Incident Management:** This is primarily concerned with supporting the Lifecycle through Service Operation by maintaining the availability of the live Services within the levels agreed with the customers and established in the Service Level Agreements (SLAs). However, the reviews of Major Incidents can also contribute to Continual Service Improvement by identifying measures to improve an organisation’s responsiveness to future Incidents.

- **Request Management:** In satisfying requests for Service and, where necessary, feeding these to Change Management, Request Management supports the Service Transition and Service Operation parts of the Service Lifecycle.

- **Problem Management:** The reactive aspect of Problem Management contributes to Service Operation in maintaining Services within Service Levels. The proactive aspect contributes to Continual Service Improvement.

- **Access Management:** In applying the policies defined in Information Security Management (ISM), Access Management is supporting the Service Design part of the Lifecycle. In managing access to live Services, support is provided for Service Operation.

- **Service Desk (Function):** This provides the point of contact for users to report Incidents and submit requests for service and change including new and changed access rights. The contribution of the Function to the Lifecycle is therefore mainly defined by the Incident, Request Fulfilment and Access Management Processes. However, the information the Service Desk acquires in the performance of its duties has relevance to all parts of the Lifecycle.
Within Service Strategy, aspects of service usage can support Demand Management by helping to determine Patterns of Business Activity and Service Portfolio Management (SPM) by validating the relevance of the Service Catalogue. All the Processes within Service Design can, to one extent or another, benefit from information and statistics gathered by the Service Desk. Perhaps the most obvious is Service Level Management (SLM), where many of the negotiated Service Levels relate to Service Desk performance. A less obvious example is the contribution the Service Desk makes to Supplier Management by commenting on the responsiveness of Suppliers to Incidents. The learning point here is the value of the Service Desk in providing not just documentary evidence of Service Management activities performed, but also anecdotal and informal feedback on the business’s use and perception of IT Services. Many organisations fail to solicit this feedback, particularly when the Service Desk is outsourced.

- **Application Management (Function):** In being responsible for managing applications throughout their own lifecycle, Application Management contributes to all parts of the Service Lifecycle. This includes Service Operation (where the Function maintains and supports application availability) as well as Service Design, Transition and Continual Service Improvement (where the Function supports the design, testing and improvement of applications).

- **IT Operations Management (Function):** This primarily supports the Service Operation part of the Lifecycle, but by maintaining performance standards defined in Service Design it has interfaces with that part of the Lifecycle too.

- **Technical Management (Function):** This contributes to Service Operation by supporting the IT infrastructure that hosts live services, but in supporting the design, testing, release and improvement of IT Services, it also contributes to the Service Design, Transition and Continual Service Improvement lifecycle phases.

Table 6.1 details the ITIL V3 Service Management Process and Functions indicating which core book they are covered in or section of the Lifecycle they fall under. Most of the Processes play a part during each phase of the Service Management Lifecycle. The shaded Processes are covered in detail in this book.

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<thead>
<tr>
<th>Function or process</th>
<th>Core book / Phase of lifecycle</th>
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<tr>
<td>Demand Management</td>
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<td>Change Management</td>
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<td>Evaluation</td>
<td>Service Transition</td>
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<td>Knowledge Management</td>
<td>Service Transition</td>
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<tr>
<td>Management of Organisational and Stakeholder Change</td>
<td>Service Transition</td>
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<td>Release and Deployment Management</td>
<td>Service Transition</td>
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<td>Service Asset and Configuration</td>
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<td>Management</td>
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<td>Service Validation and Testing</td>
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<td>Incident Management</td>
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<td>IT Operations [function]</td>
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<td>Problem Management</td>
<td>Service Operation</td>
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<td>Request Fulfilment</td>
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<td>Service Desk [function]</td>
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<td>Technical Management [function]</td>
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ABOUT THE AUTHOR
John Sansbury is a Senior ITIL Examiner, a Fellow of BCS and of the Institute of Service Management. He excels at helping organisations deliver business value from IT. As a practitioner, John learnt his trade with Philips and London Electricity.

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