This book is invaluable to IT Service Management professionals. It includes expert feedback from practitioners who have implemented configuration management in a wide range of environments.

Configuration management is the tracking, recording and monitoring of the elements of a business IT system and any changes and developments. It contains details of the organisation's infrastructure and processes that are used in the provision and management of IT services and is the vital underpinning for IT governance. In general, the book follows the ITIL® V3 approach and is based on the interactive stream of the CMSG/itSMF Conference, 'The CMDB and CMS: The Powerhouse of Service Management'.

- Essential knowledge for all IT departments
- Solid theory merged with practitioner feedback
- Applies to a wide range of real environments
- Great advice from world experts

ABOUT THE AUTHORS
Shirley Lacy is a co-author of the ITIL Service Transition book and director of ConnectSphere. She is the UK Principal Expert on the ISO Working Group for Process Assessment standards for software, systems and service management. She has worked for organisations across a range of sectors including the BBC, GlaxoSmithKline, Capgemini and Vodafone.

David Norfolk MBCS CITP is currently a journalist and an industry analyst with Bloor Research. He has worked in the public sector and in banking.
CONFIGURATION MANAGEMENT
Expert Guidance for Service Managers and Practitioners
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Further Information
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
CONFIGURATION MANAGEMENT
Expert Guidance for Service Managers and Practitioners

David Norfolk and Shirley Lacy
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMS at Associated Newspapers</td>
<td>44</td>
</tr>
<tr>
<td>Contributors to the interactive discussion</td>
<td>48</td>
</tr>
<tr>
<td>Participating practitioner community feedback</td>
<td>48</td>
</tr>
<tr>
<td>Conclusion</td>
<td>52</td>
</tr>
</tbody>
</table>

### 6 HOW TO IMPROVE AN EXISTING CONFIGURATION MANAGEMENT PROCESS | 54
- Objectives | 54
- Summary | 54
- How to improve an existing CM process | 54
- Contributors to the interactive session | 56
- Participating practitioner community feedback | 56
- Conclusion | 64

### 7 SERVICE MANAGEMENT REQUIREMENTS FOR A CMDB/CMS | 66
- Objectives | 66
- Summary | 66
- Service management requirements for a CMDB/CMS | 66
- Contributors to the interactive session | 68
- Participating practitioner community feedback | 68
- Conclusion | 73

### 8 STRATEGY AND VISION | 75
- Objectives | 75
- Summary | 75
- Service asset and configuration management visions and strategies | 75
- Contributors to the interactive session | 81
- Participating practitioner community feedback | 81
- Conclusion | 84

### 9 SELECTING CMS TOOLS | 86
- Objective | 86
- Summary | 86
- A basic implementation process | 86
- Contributors to the interactive session | 92
- Participating practitioner community feedback | 92
- Conclusion | 97

### 10 POPULATING A CMDB: PROCESS DESIGN | 100
- Objectives | 100
- Summary | 100
- How do you populate a CMDB? | 100
- Contributors to the interactive session | 105
- Participating practitioner community feedback | 105
- Conclusion | 111

### 11 IMPLEMENTATION | 113
- Objective | 113
- Summary | 113
- Bringing the CMS to fruition | 113
CONTENTS

Contributors to the interactive session 116
Participating practitioner community feedback 116
Conclusion 120

12 GOOD IDEAS... AND ONES TO AVOID 122
Objectives 122
Summary 122
What works and what does not 122
Contributors to the interactive session 124
Participating practitioner community feedback 124
Book conclusion 131

Appendix 134
Notes 138
Index 139
FIGURES AND TABLES

Figure 1.1  The architectural layers of the CMS  3
Figure 2.1  Four architectural layers of the CMS and SKMS  10
Figure 2.2  The role of the SKMS and CMS in decision-making  11
Figure 3.1  Observed benefits of configuration management in ranked order  25
Figure 3.2  Number of people [full-time equivalents] dedicated to the configuration management function  26
Figure 3.3  Organisations that have established a function/department for configuration management  27
Figure 3.4  Reporting level for the configuration management role in an IT service organisation  27
Figure 5.1  Configuration management and CMDB underpin key processes to deliver improvements  46
Figure 5.2  CMDB/CMS architecture for the case study  47
Figure 8.1  Example of a configuration model  78
Figure 10.1  Sample CMDB structure  101
Figure 10.2  Identifying definitive data diagram  102
Figure 10.3  Gap analysis using red/amber/green identification  103
Figure 10.4  Weaknesses in your process or data/information?  109
Figure 11.1  CMS architectural model  115
Figure 11.2  Strategic approaches  117
Figure 12.1  Service environment  122
Figure 12.2  Key stakeholders  124
Figure A1.1  The monitor control loop  136

Table 3.1  ITIL value statements for configuration management  22
Table 3.2  ITIL value statements for change management  23
Table 3.3  Survey value statements for configuration management  24
Table 8.1  Example of future states with process automation  79
Table 9.1  Key selection issues  91
Table 10.1  Process and maturity evaluation  103

Figure 11.1 and Tables 3.1, 3.2 are based on OGC ITIL material. Reproduced under licence from OGC.
Shirley Lacy is Managing Director of ConnectSphere and specialises in the application of service management best practices to deliver value from IT investments. She leads ConnectSphere’s assessment and IT service management practice group.

Shirley is highly regarded within the industry and is an authority on service management and configuration management practices. Shirley is a co-author of the OGC’s ITIL Service Transition book with Ivor Macfarlane and the British Standards Institute (BSI) publications on Achieving ISO/IEC 20000 with Jenny Dugmore.

Shirley is the BCS, The Chartered Institute of IT representative on the British Standards committee for IT Service Management, IST/15/-8 BSI IT Service Management group (ISO/IEC 20000). She is the UK Principal Expert on the ISO Working Group for Process Assessment standards for software, systems and service management.

David Norfolk first got involved with enterprise systems computing professionally in 1978, and has worked in England and Australia in Database Administration; Development Method and Standards; Internal Control; Network Management; Operations Research; and even PC Support.

Working conditions in banking in the City in the 1990s eventually drove him into a career as an independent analyst and journalist. He has written for most of the news-stand PC and computing magazines in the UK as well as some in the Middle East and America, and is now an industry analyst with Bloor Research.

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### ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
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</tr>
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<tbody>
<tr>
<td>API</td>
<td>Application Programming Interface</td>
</tr>
<tr>
<td>BRM</td>
<td>Business Relationship Management/Manager</td>
</tr>
<tr>
<td>BSI</td>
<td>The British Standards Institute</td>
</tr>
<tr>
<td>CCO</td>
<td>Chief Compliance Officer</td>
</tr>
<tr>
<td>CCRM</td>
<td>Change, Configuration and Release Management Specialist Group (itSMF)</td>
</tr>
<tr>
<td>CFO</td>
<td>Chief Financial Officer</td>
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<tr>
<td>CI</td>
<td>Configuration Item</td>
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<tr>
<td>CIO</td>
<td>Chief Information Officer</td>
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<tr>
<td>CKO</td>
<td>Chief Knowledge Officer</td>
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<tr>
<td>CMDB</td>
<td>Configuration Management Database</td>
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<td>CMM</td>
<td>Capability Maturity Model</td>
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<td>CMMI®</td>
<td>Capability Maturity Model Integration</td>
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<td>CMS</td>
<td>Configuration Management System</td>
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<tr>
<td>CMSG</td>
<td>Configuration Management Specialist Group</td>
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<tr>
<td>COBIT®</td>
<td>Control Objectives for Information and related Technology</td>
</tr>
<tr>
<td>COTS</td>
<td>Commercial Off-The-Shelf</td>
</tr>
<tr>
<td>CR0</td>
<td>Corporate Risk Officer</td>
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<tr>
<td>CSF</td>
<td>Critical Success Factors</td>
</tr>
<tr>
<td>CSI</td>
<td>Continual Service Improvement</td>
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<tr>
<td>DML</td>
<td>Definitive Media Library</td>
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<tr>
<td>DTAP</td>
<td>Development, Testing, Acceptance and Production</td>
</tr>
<tr>
<td>GUI</td>
<td>Graphical User Interface</td>
</tr>
<tr>
<td>IDE</td>
<td>Integrated Development Environment</td>
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<tr>
<td>IP</td>
<td>Internet Protocol</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>IEC</td>
<td>International Electrotechnical Commission</td>
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<tr>
<td>ISO</td>
<td>International Organization for Standardization</td>
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<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>ITSM</td>
<td>IT Service Management</td>
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<td>itSMF</td>
<td>IT Service Management Forum</td>
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<tr>
<td>KPI</td>
<td>Key Performance Indicator</td>
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<tr>
<td>MTRS</td>
<td>Mean Time to Restore Service</td>
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<td>OLA</td>
<td>Operational Level Agreement</td>
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<tr>
<td>PIR</td>
<td>Post-Implementation Review</td>
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<td>PTM</td>
<td>Physical Technology Model</td>
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<tr>
<td>QM</td>
<td>Quality Manager</td>
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<tr>
<td>RFI</td>
<td>Request For Information</td>
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<tr>
<td>ROI</td>
<td>Return On Investment</td>
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<tr>
<td>RUP</td>
<td>Rational Unified Process</td>
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<td>SACM</td>
<td>Service Asset and Configuration Management</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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<tr>
<td>SLM</td>
<td>Service Level Management/Manager</td>
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<tr>
<td>SMART</td>
<td>Specific, Measurable, Agreed, Realistic and Time-specific</td>
</tr>
<tr>
<td>SMT</td>
<td>Senior Management Team</td>
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<tr>
<td>SOX</td>
<td>Sarbanes–Oxley</td>
</tr>
<tr>
<td>SVP</td>
<td>Senior Vice President</td>
</tr>
<tr>
<td>VP</td>
<td>Vice President</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.

Asset Management  (Service Transition) Asset Management is the Process responsible for tracking and reporting the value and ownership of financial Assets throughout their Lifecycle. Asset Management is part of an overall Service Asset and Configuration Management Process. See Asset Register.

Asset Register  (Service Transition) A list of Assets, which includes their ownership and value. The Asset Register is maintained by Asset Management.

Baseline  (Continual Service Improvement) A Benchmark used as a reference point. For example:

- An ITSM Baseline can be used as a starting point to measure the effect of a Service Improvement Plan.
- A Performance Baseline can be used to measure changes in Performance over the lifetime of an IT Service.
- A Configuration Management Baseline can be used to enable the IT Infrastructure to be restored to a known Configuration if a Change or Release fails.

Build  (Service Transition) The Activity of assembling a number of Configuration Items to create part of an IT Service. The term Build is also used to refer to a Release that is authorised for distribution. For example Server Build or laptop Build.

Capability Maturity Model (CMM)  (Continual Service Improvement) The Capability Maturity Model for Software (also known as the CMM and SW-CMM) is a model used to identify Best Practices to help increase Process Maturity. CMM was developed at the Software Engineering Institute (SEI) of Carnegie Mellon University. In 2000, the SW-CMM was upgraded to Capability Maturity Model Integration (CMMI®). The SEI no longer maintains the SW-CMM model, its associated appraisal methods, or training materials.

Capability Maturity Model Integration (CMMI®)  (Continual Service Improvement) Capability Maturity Model Integration (CMMI®) is a process improvement approach developed by the Software Engineering Institute (SEI) of Carnegie Mellon University. CMMI® provides organisations with the essential elements of effective processes. It can be used to guide process improvement across a project, a division, or an entire organisation. CMMI® helps integrate
traditionally separate organisational functions, set process improvement goals and priorities, provide guidance for quality processes, and provide a point of reference for appraising current processes. See http://www.sei.cmu.edu/cmmi/ for more information.

**Change Management** (Service Transition) The Process responsible for controlling the Lifecycle of all Changes. The primary objective of Change Management is to enable beneficial Changes to be made, with minimum disruption to IT Services.

**CI Type** (Service Transition) A Category that is used to Classify CIs. The CI Type identifies the required Attributes and Relationships for a Configuration Record. Common CI Types include: hardware, Document, User etc.

**COBIT®** (Continual Service Improvement) Control Objectives for Information and related Technology (COBIT®) provides guidance and Best Practice for the management of IT Processes. COBIT® is published by the IT Governance Institute. See http://www.isaca.org/ for more information.

**Configuration Baseline** (Service Transition) A Baseline of a Configuration that has been formally agreed and is managed through the Change Management process. A Configuration Baseline is used as a basis for future Builds, Releases and Changes.

**Configuration Control** (Service Transition) The Activity responsible for ensuring that adding, modifying or removing a CI is properly managed, for example by submitting a Request for Change or Service Request.

**Configuration Item (CI)** (Service Transition) 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** (Service Transition) The Process responsible for maintaining information about Configuration Items required to deliver an IT Service, including their Relationships. This information is managed throughout the Lifecycle of the CI. Configuration Management is part of an overall Service Asset and Configuration Management Process.

**Configuration Management Database (CMDB)** (Service Transition) A database used to store Configuration Records throughout their Lifecycle. The Configuration Management System maintains one or more CMDBs, and each CMDB stores Attributes of CIs, and Relationships with other CIs.

**Configuration Management System (CMS)** (Service Transition) A set of tools and databases that are 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 Configuration Items and their Relationships. The CMS is maintained by Configuration Management and is used by all IT Service Management Processes. See Configuration Management Database, Service Knowledge Management System.

**Critical Success Factor (CSF)**  Something that must happen if a Process, Project, Plan, or IT Service is to succeed. KPIs are used to measure the achievement of each CSF. For example a CSF 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)**  (Service Transition) One or more locations in which the definitive and approved versions of all software Configuration Items 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.

**Gap Analysis**  (Continual Service Improvement) An Activity which compares two sets of data and identifies the differences. Gap Analysis is commonly used to compare a set of Requirements with actual delivery. See Benchmarking.

**International Organization for Standardization (ISO)**  The International Organization for Standardization (ISO) is the world's largest developer of Standards. ISO is a non-governmental organisation which is a network of the national standards institutes of 156 countries. Further information about ISO is available from http://www.iso.org/

**International Standards Organisation**  See International Organization for Standardization (ISO).


**IT Service Management (ITSM)**  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. See Service Management.

**IT Service Management Forum (itSMF)**  The IT Service Management Forum is an independent Organisation dedicated to promoting a professional approach to IT Service Management. The itSMF is a not-for-profit membership organisation with representation in many countries around the world (itSMF Chapters). The itSMF and its membership contribute to the development of ITIL

**ITIL**  A set of Best Practice guidance for IT Service Management. ITIL is owned by the 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. See http://www.itil.co.uk/ for more information.

**Key Performance Indicator (KPI)**  (Continual Service Improvement) A Metric that is used to help manage a Process, IT Service or Activity. Many Metrics may be measured, but only the most important of these are defined as KPIs and used to actively manage and report on the Process, IT Service or Activity. KPIs should be selected to ensure that Efficiency, Effectiveness, and Cost Effectiveness are all managed.

**Maturity**  (Continual Service Improvement) A measure of the Reliability, Efficiency and Effectiveness of a Process, Function, Organisation etc. The most mature Processes and Functions are formally aligned to Business Objectives and Strategy, and are supported by a framework for continual improvement.

**Maturity Level**  A named level in a Maturity model such as the Carnegie Mellon Capability Maturity Model Integration.

**Monitor Control Loop**  (Service Operation) Monitoring the output of a Task, Process, IT Service or Configuration Item; comparing this output with a predefined norm; and taking appropriate action based on this comparison.

**Office of Government Commerce (OGC)**  OGC owns the ITIL brand (copyright and trademark). OGC 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 with departments. It also provides support for complex public sector projects.

**Operational Level Agreement (OLA)**  (Service Design) (Continual Service Improvement) 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 Customers. The OLA defines the goods or Services to be provided and the responsibilities of both parties. For example there could be an OLA:

- between the IT Service Provider and a procurement department to obtain hardware in agreed times;
- between the Service Desk and a Support Group to provide Incident Resolution in agreed times.

**Post-Implementation Review (PIR)**  A Review that takes place after a Change or a Project has been implemented. A PIR determines if the Change or Project was successful, and identifies opportunities for improvement.
Process Owner  A Role responsible for ensuring that a Process is Fit for Purpose. The Process Owner’s responsibilities include sponsorship, Design, Change Management and continual improvement of the Process and its Metrics. This Role is often assigned to the same person who carries out the Process Manager Role, but the two Roles may be separate in larger organisations.

Release and Deployment Management  (Service Transition) The Process responsible for both Release Management and Deployment.

Release Management  (Service Transition) The Process responsible for Planning, scheduling and controlling the movement of Releases to Test and Live Environments. The primary Objective of Release Management is to ensure that the integrity of the Live Environment is protected and that the correct Components are released. Release Management is part of the Release and Deployment Management Process.

Release Process  The name used by ISO/IEC 20000 for the Process group that includes Release Management. This group does not include any other Processes. Release Process is also used as a synonym for Release Management Process.

Scope  The boundary, or extent, to which a Process, Procedure, Certification, Contract etc. applies. For example the Scope of Change Management 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 Asset and Configuration Management (SACM)  (Service Transition) The Process responsible for both Configuration Management and Asset Management.

Service Catalogue  (Service Design) A database or 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 Design  (Service Design) A stage in the Lifecycle of an IT Service. Service Design includes a number of Processes and Functions and is the title of one of the Core ITIL publications.

Service Knowledge Management System (SKMS)  (Service Transition) A set of tools and databases that are used to manage knowledge and information. The SKMS includes the Configuration Management System, as well as other tools and databases. The SKMS stores, manages, updates, and presents all information that an IT Service Provider needs to manage the full Lifecycle of IT Services.

Service Level  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 (SLA)**  (Service Design) (Continual Service Improvement) An Agreement between an IT Service Provider and a Customer. The SLA describes the IT Service, documents Service Level Targets, and specifies the responsibilities of the IT Service Provider and the Customer. A single SLA may cover multiple IT Services or multiple Customers.

**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. 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 Owner**  (Continual Service Improvement) A Role which is accountable for the delivery of a specific IT Service.

**Service Strategy**  (Service Strategy) The title of one of the Core ITIL publications. Service Strategy establishes an overall Strategy for IT Services and for IT Service Management.

**Service Transition**  (Service Transition) A stage in the Lifecycle of an IT Service. Service Transition includes a number of Processes and Functions and is the title of one of the Core ITIL publications.

**Stakeholder**  All people who have an interest in an Organisation, Project, IT Service etc. Stakeholders may be interested in the Activities, targets, Resources or Deliverables. Stakeholders may include Customers, Partners, employees, shareholders, owners etc.

**Tension Metrics**  (Continual Service Improvement) A set of related Metrics, in which improvements to one Metric have a negative effect on another. Tension Metrics are designed to ensure that an appropriate balance is achieved.

**Transition**  (Service Transition) A change in state, corresponding to a movement of an IT Service or other Configuration Item from one Lifecycle status to the next.

**Use Case**  (Service Design) A technique used to define required functionality and Objectives, and to Design Tests. Use Cases define realistic scenarios that describe interactions between Users and an IT Service or other System.

**Version**  (Service Transition) A Version is used to identify a specific Baseline of a Configuration Item. Versions typically use a naming convention that enables the sequence or date of each Baseline to be identified. For example Payroll Application Version 3 contains updated functionality from Version 2.
USEFUL WEBSITES

www.bcs.org
www.bcs-cmsg.org.uk

www.itil-officialsite.com/home/home.asp
www.itsmf.co.uk

BCS The Chartered Institute for IT
BCS Configuration Management Specialist Group
ITIL®
IT Service Management Forum
FOREWORD

The Configuration Management Specialist Group (CMSG – www.bcs-cmsg.org.uk/) of BCS The Chartered Institute for IT (www.bcs.org) was set up in 1995 to provide a forum for developing and promoting configuration management, as a discrete management process. This publication is the CMSG’s contribution to providing a compact, practically based, vendor-independent, ‘good practice’ guide to making a configuration management system work in the real world.

The CMSG facilitates the free and open exchange of ideas, experience and best practice at regular workshops and special events. Its aims and objectives are to:

- establish a professional development scheme, plotting a career path for professionals in configuration, change and release management;
- influence training and education within the field to achieve professional standards;
- establish a code of practice and standards for configuration, change and release management professionals including formal accreditation;
- facilitate the free and open exchange of configuration, change and release management experiences and ideas;
- influence the production and content of national, European and international standards related to configuration, change and release management;
- promote the benefit of configuration, change and release management within the industry at large;
- assure that industry receives benefits to business from configuration, change and release management;
- guide the makers of software tools to support the work of configuration, change and release management.

In 2008, the CMSG joined forces with the UK branch of the itSMF (the IT Service Management Forum – www.itsmf.co.uk/) to present a conference entitled The CMDB and CMS: The Powerhouse of Service Management at the Olympia Conference Centre, London (8 & 9 July 2008).

This conference series is the premier UK event on change, release and configuration management for the ITIL® framework.
FOREWORD

(www.itil-officialsite.com/home/home.asp) and ALM (Application Lifecycle Management). It represents an important milestone in the integration of conventional IT systems development and IT operations support as ‘automated business service delivery’, with the collaboration of the major user organisations in the field.

Presentations at the 2008 conference came from world leaders in the configuration management field, representing both practitioners and vendors, and included several people involved in the formulation of the ITIL v3 framework (from now on, unless we need to distinguish ITIL v3 from v2, this will just be referred to as ‘ITIL’) and associated standards. The conference objective was to both present existing knowledge concerning the way successful organisations are implementing their Configuration Management Database (CMDB)/Configuration Management System (CMS), and to capture new knowledge in this area from peer interactions between managers and practitioners working across the service lifecycle, in an open forum.

A novel aspect of this conference was a stream of ‘interactive session’ workshops using decision support tools that promote dynamic interaction, rich brainstorming and better discussion between users, practitioners and the vendor community. The knowledge gained from the workshops helped to create a shared understanding of today’s challenges and the strategies that will cope with them as we move forward into a ‘service-oriented’ future. This understanding is presented in the present publication and the decision-support technology used is described towards the end of Chapter 1 (see Knowledge capture during the interactive sessions on page 4).

AUDIENCE

This book is primarily directed towards practitioners in configuration management. However, the customers of configuration management, the service desk and operations teams, compliance and risk managers, service delivery managers and operations managers, and service managers and process owners are also considered to be important members of our target audience.

Vendors of configuration management technology are included in our audience and one conference objective was to have a shared understanding of the implementation issues with vendors (this was the theme of the last session in the plenary room). Effective vendors need to form long-term partnerships with practitioners and, thus, to understand their point of view. Technology is an essential part of the configuration management message, and the practical tips in this book and the people/process context it recommends, will ensure that the technology is seen to be successful in practice.

The reader value from this book is from the access it provides to sound practical knowledge from experienced practitioners in configuration management. In addition, the techniques and technology used to mine conference attendees’ knowledge should be of interest both to vendors and their larger customers because it could be applied to their own conferences and seminars.

xxii
FOREWORD

CONTEXT

The relevant parts of ITIL have become the de facto standard for configuration management. This does not mean that everyone has adopted ITIL, or that they should do so, but that its definitions provide a convenient and widely available frame of reference for this publication.

Nevertheless, there are many standards and frameworks that require configuration management besides ITIL, including COBIT®, ISO/IEC 20000, ISO/IEC 27001 and CMMI®, as well as the more specific ISO 10007:2003 Quality management systems – Guidelines for configuration management, and ISO/IEC 19770-1:2006 Information technology – Software asset management Part 1, Processes, and the general standards for software and system lifecycle management, ISO/IEC 12207 and ISO/IEC 15288. In general, practitioners in these areas will find that there are accepted mappings onto ITIL. Many of the concepts and practices in ITIL are common to all of these standards and frameworks.

In ITIL, the overall objective for service management is to provide services to business customers that are fit for purpose, stable and reliable. Adopting the guidance enables a service provider to adapt its services and respond effectively as business demand changes with business need.

The ITIL Service Transition publication (ISBN 978-0-113310-48-7) provides guidance for the development and improvement of capabilities for transitioning new and changed services into live service operation including change management, configuration management, asset management, release management and deployment management, and elements of programme and risk management. It is the key facilitator for meaningful risk-based management decision-making. It provides guidance on managing the complexity related to changes to services and service management processes while preventing undesired consequences and allowing for innovation. This publication also introduces the Knowledge Management process and the Service Knowledge Management System (SKMS), which broadens the use of service and configuration information into knowledge capability for decision and management of services.

At the heart of the ITIL configuration management process is the Configuration Management Database (CMDB). The CMDB may be a single physical repository of configuration information or an integrated set of physical databases and repositories. It is a repository for assets, configuration items (CIs) and the relationships between them. To be effective it requires a system to deliver usable information and processes to maintain the integrity of the configuration items, components, data, information and tools. This publication deals with implementing an effective and useful CMS, including the processes it involves. All changes to service assets and configuration items are recorded in the CMS.

Following from the ITIL vision, this publication also covers the achievement of desirable ‘business outcomes’ from configuration management, not just the configuration management of IT systems as an end in itself. Nevertheless, it is intended to be useful for any CMS implementation, even one outside
FOREWORD

the ITIL framework. It is also independent of any vendor-sponsored process and specific configuration management solutions or tools.

The context for this publication is provided by the plenary sessions at the 2008 BCS/itSMF conference, dealing with place of the CMS in business service delivery.

The general objectives of this work is to identify the likely barriers to implementing a CMDB/CMS (in the 21st century) and provide pragmatic ‘good practice’ approaches to overcoming them using, for example, an ITIL-compliant CMS and SKMS.

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.
1 INTRODUCTION

The text of this chapter is formed from a presentation on the Configuration Management System (CMS) that was given by Shirley Lacy and Ivor Macfarlane, co-authors of the ITIL Service Transition publication, at the start of the 2008 itSMF CMSG Conference. It provided the context for the conference as a whole and for the interactive sessions. The latter form the basis for this publication.

INTRODUCTION TO THE CMS

The ITIL CMDB

The introduction covered current thinking on why people and organisations think they need a Configuration Management Database (CMDB) solution – that is, a CMS. Typical reasons include support for inventory and asset management, governance and compliance, and simply ITIL best practice implementation. Many organisations want to create a better capability to support service delivery by integrating data and information across multiple sources and providing higher levels of automation for improved performance management.

The rationale for extending the concept of the CMDB in ITIL v3 was covered in the session. In ITIL v2, the definition of a CMDB was: “...a database that contains all relevant details of each Configuration Item (CI) and details the important relationships between CIs”. Although the ITIL v2 configuration management chapter described this as a logical database that could comprise many federated physical CMDBs, people often think that there is just one physical CMDB. This view is often encouraged by vendors trying to market their solutions. Believing that the CMDB must always be one physical database often becomes a barrier to implementation because the management buy-in and investment for a single CMDB is too great a challenge for some medium to large organisations.

Another implementation barrier is believing (mistakenly) that auto-discovery tools provide a ‘magic’ solution. Some marketing and sales people encourage this in order to sell their tools. Although auto-discovery tools can provide an efficient way of obtaining an up-to-date view of the IT environment, they do not collect data about everything that is needed for good configuration management and they can encourage the collection of unnecessary information. A critical success factor is capturing only data that is required for valid business reasons. Many implementations fail because too much unnecessary data is captured or there is a lack of process supporting CMDB maintenance and data capture.
Why ITIL?
The plenary session summarised the reasons behind ITIL. ITIL was updated in June 2007 in recognition of the advances in technology and emerging challenges for IT service providers that include:

- demonstrating value delivery by integrating business and IT services;
- the drive for innovation and change;
- the move to global sourcing;
- changing architectures, including service-oriented and virtualisation architectures;
- convergence of strategy, governance and management practices to meet compliance and control requirements;
- a greater focus on security and risk management;
- managing complex services and systems, with a consequent need for better impact assessment;
- balancing the needs for stability and change.

The structure of the ITIL is based on the ITIL Service Lifecycle, which contains five elements:

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

The ITIL service portfolio represents all the resources presently engaged or being released in various phases of the service lifecycle. It contains a service catalogue, which provides a central and accurate information set for all services running in production. Each service comprises a number of service assets vital to the running of every organisation. The continual feedback at each stage of the lifecycle enables a service provider to optimise its services from a business perspective throughout the service lifecycle.

Service Asset and Configuration Management
The Service Asset and Configuration Management (SACM) process (often just called the configuration management process) manages the service assets in order to support the other service management processes. Optimising the performance of service assets and configurations improves the overall service performance while mitigating costs and risks caused by poorly managed assets (e.g. service outages, fines, corrective licence fees and failed audits).

The ITIL configuration management process provides a systematic method of breaking down, identifying and managing complex systems and services. It aims
to establish the integrity of all identified service assets and configurations within the IT Services environment and includes the following activities:

- **Configuration planning**: understanding and defining the purpose, scope, objectives, policies and procedures as appropriate and required within the context of your organisation.

- **Configuration identification**: identifying the configuration model, the assets and configuration items (CIs) to be managed, their attributes, associated documentation and relationships to other CIs and records. Establishing unique identifiers for CIs, documentation, forms such as Requests for Change and libraries.

- **Configuration control**: the procedures used to control each CI (i.e. to create, build, install, move, add and modify a CI).

- **Configuration status accounting and reporting**: the recording and reporting of current and historical information on a CI throughout its entire lifecycle, using information held within the CMS and its CMDBs.

- **Configuration verification and audit**: checking the CI data held in the CMDB(s) against what is in the real world.

The CMS incorporates a set of applications, tools and databases for collecting, storing, managing, updating, and presenting data about all configuration items and their relationships including a view of an end-to-end service configuration. Some of these application products interface to point solutions such as software version control, release tools and auto-discovery tools. Understanding where a configuration management tool or CMDB fits into the overall architecture, illustrated in Figure 1.1, will help you to select the best solution for your organisation.

**Figure 1.1** The architectural layers of the CMS

<table>
<thead>
<tr>
<th>Presentation layer</th>
<th>Search, browse, store, retrieve, update, publish, subscribe, collaborate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge processing layer</td>
<td>Query, analysis, reporting, modelling, monitoring, alerting, dashboards, scorecards</td>
</tr>
<tr>
<td>Information integration layer</td>
<td>Integrated service and configuration management information including the integrated CMDB</td>
</tr>
<tr>
<td>Data and information sources</td>
<td>Databases/CMDBs; data from applications and tools; structured and unstructured documentation and information</td>
</tr>
</tbody>
</table>
The processes and functions that comprise configuration management maintain the CMS. The integrated CMDB in the integrated information layer provides the ‘single source of truth’ about service assets and each configuration item: historical, current and planned. It maps the important relationships between configuration items to deliver a configuration model of an IT service provider’s portfolio of services.

The CMS supports all the ITIL process owners, service owners, service management, service operations and IT staff. The CMS is effectively the basis of data and information that supports and facilitates the success and viability of the organisation as a whole, through direct influence and improvement of the ITIL processes. It is the major source of data to allow effective risk management. Without a sound basis for understanding and managing risk, an organisation will be uncompetitive due to an overly conservative risk attitude, or it will be unable to deliver due to excessive risk taking. People need the CMS to perform their IT and service management activities, and also to make informed decisions at appropriate times, for example when assessing the impact of a release going into production or the impact of incidents and problems. People therefore need relevant and accurate configuration data and information in a form that is quick, accessible, easy to update and easy to use and understand, and which is achieved through the presentation layer.

Chapter 2 summarises the feedback from the Conference interactive session about the ITIL practices covered in the plenary.

KNOWLEDGE CAPTURE DURING THE INTERACTIVE SESSIONS

The interactive sessions consisted of short 45 minute workshops that harnessed the collective knowledge and experience of the delegates and enabled the capture of a broad body of valuable information for further discussion and analysis.

This interactive approach involved using a combination of collaborative technology (with networked laptops), facilitation and the availability of content experts for each session. The wireless laptops used had specialist software installed to enable ideas, questions and knowledge to be gathered and shared in a fast and efficient manner.

The facilitators led and supported the whole process, providing more in-depth idea generation, deeper group interaction, clearer consensus building and measurement, plus highly efficient documentation of the whole event.

Significant value was added because all participants were able to contribute simultaneously and anonymously. This enhanced the session dynamics of engagement and openness.

The interactive environment demanded a structured and disciplined approach to planning to deliver the best value. During the planning, the outcomes were defined and each session had a customised process depending on the type of
session and feedback required. Although the planning was structured, the facilitators were responsive to reshaping and redirecting the sessions as necessary during the conference.

Each session was planned in advance using a combination of methods and techniques selected from the following:

- **Brainstorm**: Delegates brainstormed a specific question and put their responses into category ‘buckets’.
- **PMIQ**: Following a presentation or part of a presentation, delegates identified:
  - PLUS (P) – this is what I liked about what I heard;
  - MINUS (M) – these are my issues and concerns;
  - INTERESTING (I) – my insights or points of interest;
  - QUESTIONS (Q) for the speakers.
- **Stimulus presentation** followed by table discussion and answering specific questions.
- **List**: Delegates were asked to suggest missing items from a list (e.g. a list of users of a CMS).
- **Discussion**: Each table group selected one or two topics from a list to discuss and feedback (e.g. ‘What are the barriers to implementing CMS and how can they be overcome?’).
- **Gap analysis**: Working in table groups; ‘Where are the gaps or weaknesses in XXXX? Explain.’
- **Voting**: Delegates voted individually and the results were displayed immediately as a graph.
- **Question and answer session**.
- **Summary and feedback** on key observations and findings.

The objectives and outcomes for ‘implementing a successful CMS’ for each day, and the corresponding interactive sessions were:

**Day 1**

**Objective**: Successful positioning of CMDB/CMS requires clear explanation of the value to stakeholders. Methods for creating a clear business case were examined and what needs to be overcome in order to implement a CMS successfully was discussed.

**Outcome**: The collective understanding of the value proposition for CMS across a range of organisations and stakeholders was documented. A validated set of key barriers and associated strategies to mitigate these were identified. The document created was made available to participants immediately following the conference.
What is the CMDB/CMS all for? A presentation by Shirley Lacy of ConnectSphere and by Ivor Macfarlane of IBM. (Shirley Lacy is a management consultant with a wealth of service and configuration management experience. Ivor Macfarlane is an IT Service Management consultant and trainer working with IBM customers.)

How can we judge the value of CMDB/CMS? A presentation by John Dixon of GlaxoSmithKline. (John Dixon was the Director, Quality & Compliance within GlaxoSmithKline’s IT Infrastructure Division, involved with managing a project to establish a configuration management function within GSK.)

CMS: barriers and Critical Success Factors (CSFs) A presentation by Kevin Holland, NHS Connecting for Health. (Kevin Holland is the Head of Service Quality Improvement for the NHS National Programme for IT.)

CMS Implementation Case Study A presentation by Andrew Pieri and Mark Smith of Associated Newspapers Limited (ANL). (Andrew Pieri is Central Operations Director, responsible for Support Service Delivery across ANL’s Publishing, Advertising, Commercial and Online business divisions. Mark Smith is Head of Process Management, responsible for the definition, ownership and governance of IS processes.)

How to improve an existing CM Process A presentation by John Metcalfe, BCS CMSG and Deirdre Connis, itSMF CCRM Working Party.

Day 2
Objective: Using shared experiences, how to create alignment between stakeholder requirements and vendor products in CMDB/CMS implementations was debated.

Outcome: Structured strategies to close the gap between stakeholder needs and vendor offerings were documented.

Service Management requirements for the CMDB/CMS A presentation by Ian Salvage, then of IBM, now of ITAdapt Consultancy Ltd (Ian Salvage was a consultant for IBM’s Global Technology Services in the field of Service Management for over 10 years. He has a very broad experience of working across multiple industries delivering IT Service Management solutions to customers.)

Service Asset and Configuration Management Visions and Strategies A presentation by Mike Tomkinson, BT Global Services. (Mike Tomkinson is the Configuration Management Beacon for BT Global Services, acting as the touch point for all issues related to CM across the business where required.)

How do you populate your CMDB? A presentation by Harvey Davison of Lloyds TSB. (Harvey Davison is the full-time Configuration Manager, designing and implementing a CMDB for LloydsTSB, primarily to support the incident, problem and change processes, one of the foundations for LloydsTSB achieving ISO/IEC 20000 certification.)
**INTRODUCTION**

**Bringing the CMS to fruition** A presentation by Mark Bools of Principia IT. (Mark Bools has been involved with configuration management for large and small organisations, on projects, programmes and at the corporate strategic level for over 20 years.)

**Selecting CMS tools** A presentation by John Metcalfe of Mentor IT. (John Metcalfe has over 25 years of experience in IT applications. He has provided guidance to IS department management in the development and implementation of strategies for improving change, configuration and release management (CCRM) policies, processes and tool selection to deliver return on investment and benefits to the business.)

**Implementation: what works and what doesn’t** A presentation by Shirley Lacy of ConnectSphere and Ian Salvage then of IBM.

A feedback session from the interactive sessions was presented in the main conference room at the end of each day. This was followed by a question and answer session. Most people, regardless of background, level or role, were motivated by this different way of working because they felt engaged with the process. Feedback from delegates at the conference is summarised in Chapter 12.

**ACKNOWLEDGEMENTS**

**Session presenters**
The CMSG would like to thank the following people for their presentations and general contributions to the 2008 conference:

- Mark Bools, Principia IT;
- Deirdre Connis, itSMF CCRM;
- Harvey Davison, LloydsTSB;
- John Dixon, GlaxoSmithKline;
- Kevin Holland, NHS Connecting for Health;
- Shirley Lacy, ConnectSphere Limited;
- Ivor Macfarlane, IBM;
- John Metcalfe, Mentor IT;
- Andrew Pieri, Associated Newspapers Limited;
- Ian Salvage, then IBM;
- Mark Smith, Associated Newspapers Limited;
- Mike Tomkinson, BT Global Services.
The interactive sessions were designed by:

- **Sarah Boulton**, Director and Founder of Realise Group Consulting Ltd. Sarah specialises in organisational development consulting, facilitation and coaching. She has over 15 years of experience with companies as diverse as British Airways, BT, BP, BDP Media Group, Rolls Royce, eircom, Inter-American Development Bank and the NHS. Sarah facilitates workshops using RealTools, an innovative group engagement technology that enables sessions to be more open, productive and compelling. She holds postgraduate qualifications in Organisational Behaviour and Psychotherapy.

- **Shirley Lacy**, of the BCS CMSG and the itSMF. Shirley is Vice Chair of the BCS CMSG. She represents the BCS on the BSI committee that develops the IT service management standard, ISO/IEC 20000. She holds the ITIL Expert accreditation and is an accredited ITIL trainer. She regularly organises and facilitates workshops.

- **Nick Leigh**, Director of TheReallyUseful.com Ltd. Nick specialises in the design and delivery of workshops and events using interactive technology and collaborative processes. Laptop-based collaborative processes enable large groups to rapidly brainstorm ideas, share information, problem solve, and feedback in an open and transparent way leading to a richer outcome for a meeting. Over 10 years, Nick has designed and delivered hundreds of interactive meetings, workshops and events of all sizes, both face to face and remote.
OBJECTIVES

This chapter is derived from the first interactive session at the conference. This followed the plenary session that covered the CMDB/CMS and what configuration management (CM) has become in the 21st century. The objectives of this chapter are to review why organisations use a CMS and the initial barriers to starting a CMS implementation. It also identifies key deliverables that can be used to stimulate ‘buy-in’ to the project at all levels.

SUMMARY

This chapter sets the scene for the rest of the book by presenting the accepted view of the CMS and what it is for. The interactive sessions then explore any issues with this.

THE NORMATIVE VIEW OF WHAT A CMS IS FOR

A presentation by Lacy and Macfarlane: co-authors of the ITIL v3 Service Transition volume. They led the assembled delegates through the Configuration Management System (CMS) and the anticipated barriers to its implementation, as a preliminary to the open discussion on the subject.

The CMS primarily supports asset and configuration management by enabling an organisation to identify, control, report and audit assets and configurations, and to manage changes (see Chapter 1). It incorporates a set of applications, tools and databases for collecting, storing, managing, updating and presenting data about all configuration items and their relationships, including a view of an end-to-end service configuration. Some of these application products interface to point solutions such as software version control, release tools and auto-discovery tools. The CMS is maintained by the configuration management process and/or function. The CMS also contributes business benefit via other service management (and wider) processes, facilitating their effectiveness and efficiency. For example, configuration management delivers the means to achieve impact analysis for incident and change management, and trend analysis within problem management. This secondary role has, in the past, to an extent hidden the crucial role a CMS plays in an organisation.
People use the CMS to perform their IT and service management activities and also to make informed decisions at appropriate times. Key stakeholders for the CMS are therefore the ITIL process owners, service owners, service management, service operations and IT staff.

ITIL presents the CMS architecture in four layers to help people understand the scope and applicability of different CMS applications and tools. They need relevant and accurate configuration data and information in a form that is quick, accessible, easy to update and easy to use and understand. This is achieved through the presentation layer of the CMS shown in Figure 2.1.

The integrated CMDB in the information integrated layer of Figure 2.1 provides the ‘single source of truth’ about service assets and each configuration item: historical, current and planned. It also maps the important relationships between configuration items to deliver a configuration model of an IT service provider’s portfolio of services.

**Figure 2.1** Four architectural layers of the CMS and SKMS

<table>
<thead>
<tr>
<th>Layer 1: Presentation layer</th>
<th>Layer 2: Knowledge processing layer</th>
<th>Layer 3: Information integration layer</th>
<th>Layer 4: Data and information sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search, browse, store, retrieve, update, publish, subscribe, collaborate</td>
<td>Query, analysis, reporting, modelling, monitoring, alerting, dashboards, scorecards</td>
<td>Integrated service and configuration management information including the integrated CMDB</td>
<td>Unstructured documents / records, Structured documents / records, Definitive Media Library, Software configuration management tools, Discovery and audit tools, Enterprise applications</td>
</tr>
</tbody>
</table>
The layers of the CMS and SKMS shown in Figure 2.1 are:

- **Presentation layer (Layer 1):** This layer presents information to users to enable them to do their activities such as searching and finding specific configurations, updating information, reporting, and publishing information and reports. Example users might be operations staff who need to understand the impact of incidents and changes, and software asset management staff who need to audit the software licences.

- **Knowledge processing layer (Layer 2):** This layer collates information to pass to Layer 1. An example might be a tool that analyses information to find the likely sources of unauthorised changes and software licence compliance issues.

- **Information integration layer (Layer 3):** This layer integrates data and information from Layer 4. This layer holds definitive configuration information for the CMS in an integrated CMDB that can be used by Layers 1 and 2. For example, the integrated CMDB can integrate application data with infrastructure data to create the configuration information for an end-to-end service.

- **Data and information sources (Layer 4):** These are the definitive sources of data and information that are maintained from different internal and external suppliers. It includes platform specific CMDBs (e.g. on Unix or the mainframe platform) and the Definitive Media Libraries (DMLs) that store definitive master sources of electronic or physical objects such as source code, executable files, software licence documentation and CD-ROMs.

ITIL recognises the broader role of knowledge management within the delivery and support of services. The real value of the CMS is as a fundamental element within a business-focused Service Knowledge Management System (SKMS — illustrated in Figure 2.2). The SKMS stores, manages, updates and presents all information that an IT service provider needs to manage the full lifecycle of IT services. It covers a much wider base of knowledge than the CMS, for example it includes the experience of staff. The decision-making process should be used to drive the design of the SKMS and the CMS.

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**Figure 2.2** The role of the SKMS and CMS in decision-making
The SKMS lets a vast amount of (relatively) easily collected data to be processed through the information and knowledge layers into delivering the wisdom (targeted and directed information and knowledge) that forms the real basis for effective business decision-making. This focus on delivering accurate business decisions (the key differentiator for most businesses) has also helped expose the myth that configuration management is facilitated by the successful purchase and implementation of technology in the shape of sophisticated software: one the most persistent and traditional myths around configuration management. Although this has been the approach taken by some organisations for many years, the first and most powerful step in the development and implementation of configuration management is the planning (i.e. determining the constraints, what the CMS will cover, what its purposes are, how the information will be maintained etc.).

The tradition of technological focus has led to organisations acquiring and populating CMDB technology without really considering its use or its possible impact on the business. The fact that this CMDB-centric view fits with the marketing strategies of some vendors who have a CMDB to sell has fuelled the fire over recent years. In fact, the CMS and SKMS need to be process-oriented and there are simply no technological ‘silver bullets’ that will solve the real issues.

Understanding the role that the CMS and broader SKMS can play in an organisation and how the data collected must support and help bond the wide range of required processes are key. Often consultancy, to help change the mindset, rather than improvements in technology, can offer the best chance of something approaching a ‘silver bullet’. This is because the successful CMS/SKMS approach requires an ‘ITIL culture’, or something of similar maturity, which helps organisations focus on business success metrics, on whole lifecycle delivery cost/value, and which considers all the stakeholders in configuration management, not just operations staff. This also helps to avoid collecting data for its own sake.

Establishing the knowledge focus allows an organisation to determine its configuration requirements by reference to its business goals, the business services that support the goals, and the IT and other services that in turn support those business services. Starting at the business end and driving from there, via the service structure, to the data requirements, establishes a CMS approach that:

- collects only data that will be used to support business objectives: not wasting resources on collecting data that will never be used or cannot be maintained;
- ensures that technology purchases reflect what is required and justified;
- allows non-technology data and information to be collected and held within the SKMS and CMS;
- facilitates the use of relevant data and information in support of non-IT services.
CONTRIBUTORS TO THE INTERACTIVE SESSION

Twenty-three contributing delegates from the practitioner community included representatives from Principia IT, LFEPA, Bloor, Fujitsu Services, Mediatek, BAA, HMPS, Lloyd’s of London, BAE Systems, EADS DS UK Ltd, iCore, TeliaSonera, Eracent, Shell, Prudential, Stannah, ECB, and Axios Systems.

PARTICIPATING PRACTITIONER COMMUNITY FEEDBACK

Barriers to implementation
The delegates were asked to consider and discuss the question ‘What are the common problems in implementing a CMDB/CMS?’. Feedback was collected under the headings:

- Demonstrating value/benefit;
- Stakeholders;
- Requirements;
- Design;
- Realisation;
- Other.

Common problems in implementing a CMDB/CMS
Delegates thought that the benefits of a CMS are often difficult to sell because they are often indirect or intangible. IT people (who often, wrongly, see the CMS in terms of ‘their’ CMDB) are often poor at communicating the benefits in any case.

It is important to be able to demonstrate the value or benefit of your CMS in business terms, so delegates thought that you should establish useful metrics from the start. You must cover the bigger picture, always remembering that the ultimate (business) client may not have much idea of what a CMS can do for them.

One danger is that the CMS is often implemented to provide compliance with company governance standards or to gain certification against standards, without any real thought as to how the business will benefit. In other words, sometimes people implement a CMS ‘because it’s the right thing to do’, but they don’t think about what it could achieve for the business. You must be able to tell the CMS story in language that business stakeholders can understand and you must be able to produce simple cost–benefit examples appropriate to each stakeholder. In the end, everybody involved in implementing a CMS needs to know ‘what’s in it for me’ in order to commit to involvement.

Ultimately, you must be able to persuade people to use the CMS and maintain the CMDB. This means coping with the unfortunate fact that the theory often differs from reality when implementing a real CMS, especially
when implementing it in a complex real-world organisation with extensive legacy technologies to replace or integrate with.

**Common stakeholder-related issues in implementing a CMDB/CMS**

A common problem delegates found is that senior stakeholders in management can 'talk the talk' without really investing in the process and people issues surrounding the CMS. They sometimes appear to think that buying the right tool (e.g. a new CMDB or auto-discovery tool) is all that is necessary for success.

On the other hand, each organisational silo often wants its own CMDB and process in order to maintain control of its own information. This probably reflects an organisation at a low level of organisational maturity, leading to lack of confidence in other teams outside its own. Previous experience of failures with organisation-wide initiatives is also a barrier for some people.

It is vital to get informed senior management buy-in and to identify the key influencers who can get the business to understand the value of what is proposed and sign off the various commitments needed. You must identify and get the support of the right stakeholders, those who stand to gain by the implementation and also those who hold the key to removing any barriers.

The biggest stakeholder problems you will meet are probably due to a lack of suitable or knowledgeable people in the appropriate areas and to a lack of management and user buy-in. A little knowledge, however, is a dangerous thing, and stakeholders with a small amount of experience or training can hold dangerous misconceptions and sometimes use obfuscating jargon as a defence or barrier to being seen as incompetent or simply unaware of state-of-the-art process.

Ultimately, however, the delegates thought that the key to managing the stakeholder-related issues associated with implementing a CMS is to understand who will pay for the implementation and make sure the resources you will need for it are firmly and formally allocated in the appropriate budgets.

**Common requirement-related problems in implementing a CMDB/CMS**

The primary concern here seemed to be with getting the scope of the CMS implementation correct, that is 'What CIs do we need to know about?'. Continual scope creep, both from customers and users, can be an issue, but, according to some delegates, the final scope is usually wider than originally thought. Prioritisation is important: you must capture only what is really required for your CMS, not just whatever is available.

The time frame for implementing a CMDB is often unrealistic and perhaps this is related to unrealistic scoping.

There are sometimes mismatches between the expectations held by the various stakeholders. It’s good to have a firm (but negotiable) specification at the start of any phase of a CMS implementation to ensure that all areas are covered to everybody’s satisfaction.
Common design-related problems in implementing a CMDB/CMS
Delegates said that it can be an issue knowing where to start with assets and/or stakeholders. You need to know what, in your organisation, needs to be controlled and where this information is currently held. Legacy silos within the company can create difficult CMDB design issues, redundancy in existing CIs and issues with deleting obsolete CIs. It is also important to get the scope and depth of configuration items correct. If the level is too high the information may not be useful, but too much detail means that you will drown in detail with an expensive maintenance overhead.

Designing the appropriate CI granularity can be difficult: it must be balanced between a technical and a business focus, and kept at a manageable level. The identification of what constitutes a CI will be specific to a given organisation.

The complexity of information and communications technology services can make design difficult and a technical architecture supporting discovery automation, reconciliation and integration with change and other processes (to facilitate maintenance) is not easily available at a reasonable price.

Part of the design phase should be the creation of an appropriate data model, which pulls together the IT design requirements with the requirements from other areas such as Finance, Commercial etc.

Common problems in implementing a CMDB/CMS associated with realisation
A realisation that ‘one size does not fit all’ is important. Try starting small and see what can be done without massive investment. This enables faster buy-in from stakeholders.

Tool scalability can be an issue, but do not forget scaling down: delegates pointed out that some tools are not scalable for SMEs. Vendor tool lock-in (e.g. from the service desk area) can also be an issue. Vendors say they have open interfaces, but so far this has not been well demonstrated. And, of course, there is the ‘buy it or build it’ issue to resolve.

Data quality can be a huge issue: how to ensure it; how to measure it; how to maintain its quality and consistency. Distributed data sources and lack of format commonality can be real issues if you haven’t planned for them. A general lack of integration tools for various CMDB sources does not help.

Legacy systems can be a problem too. Most organisations have too many existing systems already embedded into existing processes. You need to maximise the appropriate utilisation of the different legacy ‘CMDBs’ (or configuration files) while still allaying fears of possible staff redundancy, but gathering all the correct information about certain CI types in disparate environments may not be easy.

In the end, it is important to focus on what you really want from your CMDB/CMS, and make sure that it does it.
Other common problems in implementing a CMDB/CMS
Choosing the wrong approach can be fatal. Delegates agreed that a gradual (evolutionary) approach is a much lower risk than a big bang (revolutionary) approach.

A lack of adequate resources is often an issue, but the biggest barriers are probably organisation and cultural change. It can be useful to make use of non-IT examples, such as automotive production or using and refining a food recipe, to illustrate the role and benefits of configuration management.

Specific likes, dislikes and insights arising from the session
Delegates seemed to appreciate reassurance that they are on the correct course and that the industry is generally behind initiatives such as ITIL v3. The need for an additional 'comfort factor' when moving from a technology silo 'comfort zone' to a model encompassing the whole business should not be overestimated. Delegates thought that this CMSG/itSMF event, for example, was pulling unique people with shared interests together, so that they can find out that they are not alone. This probably underlines the importance of giving the people involved in implementing your CMS access to a wider community, whether through face-to-face courses, seminars, BCS events or conferences.

Delegates also appeared to see ITIL v3 as an improvement, commenting that ‘it is much more integrated than v2, it looks at the bigger picture and the interfaces between the different areas of service management’. Participants appreciate the ITIL structures and models generally, being able to ‘put things in the right place’. ITIL v3 provides a framework that encourages people to think about the end result they expect from configuration management. The outputs include: views and reports, and quality and assurance improvements. Some delegates could already see benefits from implementing CMS in their organisations using the ITIL models.

However, some delegates expressed a concern that the information presented was at a very high level and that, although it all looked good on the diagram, implementation may be too challenging. It appeared rather complex and the models were sometimes incomplete or had too much in them (a difficult balancing act). Some delegates thought that the scope of ITIL v3 is too big and the technology is not yet ready to achieve it.

What are really, in effect, cultural issues were mentioned: the danger of the CMDB becoming an end in itself and the difficulty of measuring improvement when very limited configuration management capabilities are in place to start with. Almost anything, good or bad, can look like an immediate improvement in these circumstances, even if it causes problems in the longer term. Issues may arise when attempting to show management that CMS is the best way forward, when little process or standards are in place (i.e. no ITIL processes are being used).

One possible technology-related barrier was thought to be that many IT people see software configuration management as all there is to configuration management. Another was that a central CMDB may be seen as an unacceptable security risk if you cannot enable secure role-based access to the CMS.
Some very interesting insights came out, especially that the service knowledge concept can usefully be applied at the application level. ITIL v3 can be applied at the application development and business levels.

Some participants wondered about the application to smaller organisations. Some delegates asked whether a specialised CMDB tool is always needed or whether a spreadsheet could do the job, and whether, in a small organisation, a single CMDB product could embody both CMDB and CMS. The answer is yes, in both cases, but you need to fully understand the concepts behind CMS and establish the right process if you are to make a success of this.

Specific issues identified
Participants were asked to identify specific issues that would need to be addressed during any practical CMS implementation so the feedback could be prioritised and the key issues highlighted, making sure that none were overlooked.

- Delegates thought that the normative model presented is all very well, but people will need to see practical examples of its implementation before trusting it fully.
- There is a possible issue with using the Intellectual Property Rights associated with the published ITIL models (these are explained at www.itil-officialsite.com/nmsruntime/saveasdialog.asp?IID=175&sID=139). Obviously ITIL has worth and if it is given away for no charge, it may not be valued, but the world would benefit if it was more widely adopted. It would be useful if ITIL and other standards, while fully chargeable to organisations, could be made available at discounted prices to individuals.
- There is a small-scale ITIL implementation, but a 'dummies guide' for small organisations would be appreciated to explain CM concepts to non-technical management. These are the sort of things that will appear in the ITIL supplementary materials and ITIL Live. Nevertheless, if an ITIL v3 practitioner cannot explain configuration management to a business manager, perhaps s/he isn’t fully trained in ITIL v3 yet!
- Identifying a good starting point for converting those reluctant to change to new ways of working was thought to be a possible issue. As usual, managing change, and especially cultural change, will be the biggest barrier to implementation. In particular, how do you stop the CMDB becoming an end in itself?
- Technical issues identified included the possible administrative burden of a CMS. It is not the cost of implementation that matters in the end but the continuing maintenance cost. A CMS with incomplete information won’t be used; but neither will a CMS with so much information that no one can afford to maintain it and it becomes out of date.
- Another technical issue raised is to do with how commercial products map onto ITIL terms such as CMDB, for example the question ‘Can IBM ClearCase/Quest be a CMDB?’ was asked. To some extent, this needs to be addressed by vendors. There is also the ITIL Software Scheme that vendors can use to certify their software solutions. There are issues with terminology, but hopefully international standards and the ITIL glossary can help with this.
CONCLUSION

The presenters disposed of the myth that configuration management is simply a matter of the successful purchase and implementation of technology in the shape of sophisticated software.

The CMS is now recognised as a key element of the necessary decision-support system on which the effective delivery of services rests. Although this was always true, the higher profile afforded by the take-up of revised guidance has brought this to the attention of management and this is an important factor in making it more possible to obtain funding to implement an effective CMS. The CMS is central to successful IT service management.

The first and most important step in the development and implementation of configuration management is in identifying the constraints, planning for what the CMS will cover, what it will be used for and by whom.

The interactive discussions covered the key areas of CMS implementation, utilisation and maintenance. They identified issues with demonstrating the value of the CMS to the business (a CMS has no value in itself and is only of value if it is used by the business); with obtaining the right kind of stakeholder buy-in (senior management buy-in is particularly important); designing the appropriate level of granularity for CIs (not so high level as to be useless, but not so low level as to be an unacceptable maintenance overhead); the importance of data quality and of integrating legacy systems; and the importance of dealing with cultural issues.

General issues were identified with the amount of detailed practical assistance available for implementing a CMS and with the difficulty of mapping vendor claims for products onto ITIL requirements.

The issues raised in this chapter will be addressed in later chapters.
configuration management process
see Service Asset and Configuration Management process
Configuration Management System (CMS)
administrative burden, 17
architecture see architecture benefits from, 9, 23–25, 29, 30–31, Fig. 3.1
change management and, 30 composition, 3, 9 configuration management of, 63 credibility and trust in, 36, 37, 42 decision-making and, 11–12, 18, 30, Fig. 2.2 demonstration of benefit, 13–14, 18, 36, 129 extensibility, 129 functions, 29 implementation see implementation of CMS improvements from, 114–125, 31–32, Fig. 3.1 information architecture, 115 integration of existing CM data see integration options ITIL definition, 114 key stakeholders, 124–125, 131, Fig. 12.2 maintenance, 4, 9, 121 as mission critical system, 116 objectives, 129–126 reasons for, 88 resilience, 118 role, 4, 9–10 scope, 125–126 service management requirements, 66–74 as single source of information, 94 stakeholders see stakeholders strategic vision see strategic visions successful approaches, 12 true fruition, 120–121 value, 19–27 see also Configuration Management Database configuration management team dedicated personnel, 26, Fig. 3.2 role, 80, 81, 132 transformation, 77–78 configuration managers formal identification, 82, 84 role, 80 configuration models, 3, 4, 77, Fig. 8.1 configuration planning, 3 configuration status accounting and reporting, 3 configuration verification and audit, 3 Connis, D., 6, 54–56 continual improvement, 76–77 contractual agreements, 119 controls failure detection, 57–58 implementing, 57 process improvement, 62 costs benefits from CMS, 24 justification, 20 tools, 88 value and, 19 see also funding costs management, 84 Critical Success Factors (CSFs)
appropriateness, 33 business representatives, 40 identification, 67, 73 ITIL, 35–36, 38–39, 40, 41, 42–43 process owners, 38 project managers, 41 selection, 34 service delivery and operations management, 39 service desks, 36–37, 42 service managers, 38 service and operations teams, 35–36 CSF see Critical Success Factors cultural change as barrier to implementation, 17, 36, 41 importance, 44 managing, 18, 49, 51–52, 128, 131 senior management and, 80 data accuracy, 107 maintenance, 71 ownership, 71, 109, Table 10.1 quality, 15, 18, 30, 40, 107 requirements, 69 selection, 1, 14, 34 data dictionaries, 119 data and information sources layer, 3, 11, 114, Fig. 2.1, Fig. 11.1 data models, 15, 47 Davison, H., 6, 100–105, 111 decision-making requirements, 69, 73 role of CMS, 11–12, 18, 30, Fig. 2.2 tool selection process, 89–91 decommissioning process, 107 defect management, process failure detection, 59 Definitive Media Libraries (DMLs), 11 discovery tools, 1, 51, 58 discussion technique, 5 Dixon, J., 6, 19–23, 30–31 documentation, 110, Table 10.1 due diligence, 119 effectiveness, critical success factors, 36–37 efficiency critical success factors, 36–37 from CMS, 31 extensibility, 129 external systems integration popularity, 120, Fig. 11.2 practical requirements, 118–119 failures of CM process audits and, 58 change management and, 60 controls, 57–58 defect management and, 59 detection techniques, 56–62, 64–65, 132 during service lifecycle, 61 feedback, 59 incident management and, 59 monitoring techniques, 57–58 organisational maturity and, 61–62 problem management and, 59–60 reporting, 62 root cause analysis, 55, 65 service desks and, 59 stakeholder involvement, 55 symptoms, 54–55 feasibility studies, 84 feedback anonymous, 64 for CM improvement, 55 monitor control loop, 135–136 process failure detection, 59 service lifecycle, 2 testing, 58–59 funding for definition phase, 70 hybrid implementation, 119 in-house integration, 118 post implementation, 121 sources, 14, 127 gap analysis, 5, 51, 102–103, 105–108 GlaxoWellcome, 19–20 glossary of terms, 119 goals, 76 governance issues importance of CMS, 114 tools, 88, 94, 99 top-down approach, 67, 73 Holland, K., 6, 33, 42 hybrid integration strategy popularity, 120, Fig. 11.2 practical requirements, 119–120 risks, 120 implementation of CMS, 113–121 analysis phase, 45–46 barriers to see barriers to implementation business drivers, 48, 51 case study, 44–53 common problems, 13–16 critical factors for success, 123 demonstration of benefits, 13–14, 18, 36, 126 design issues, 15 evolutionary vs revolutionary, 16, 70, 116 foundation, 122 funding, 14, 127 governance issues, 67, 73 incremental, 46, 47–48, 49, 52, 78, 85 lessons learned, 47 outsourcing, 116 perception issues, 33 potential problems, 123 realisation issues, 15 realistic approach, 47 scope, 14, 132 single vendor solutions, 46, 49, 51, 52 staged, 131 stakeholder issues, 14, 18, 127 starting points, 114, 132 success criteria, 47, 50
without formal project, 21
see also integration options
in-house integration strategy
popularity, 120, Fig. 11.2
practical requirements, 117–118
incident management
improvements from CMS, 45,
Fig. 5.1
process failure detection, 59
information integration layer, 3, 11,
114, 115, Fig. 2.1, Fig. 11.1
institutionalised processes, 135
integration options, 116–120, 129,
133
external systems integration,
117, 118–119, 120
hybrid, 117, 119–120
in-house, 117–118, 120
primary supplier integration,
117, 119, 120
relative popularity, Fig. 11.2
see also implementation of CMS
Intellectual Property Rights, 17
ISO/IEC 20000, 32
IT Support, responsiveness, 29
ITIL
background, 2
CMDB concept, 1
commercial products and,
17, 18
feedback on, 16
Intellectual Property Rights, 17
structure, 2
ITIL Service Lifecycle, 2
ITIL Software Scheme, 17
‘just doing it’, 134
Key Performance Indicators (KPIs)
identifying, 50, 132
monitoring, 57, 58
prevalence, 21
selection, 34, 131
in strategic vision, 81
see also metrics
knowledge capture methods, 4–5
knowledge management, 11
see also Service Knowledge
Management System
knowledge processing layer, 3, 11,
114, Fig. 2.1, Fig. 11.1
KPI see Key Performance Indicators
Lacy, S., 1, 6, 7, 8, 9, 122–123
legacy systems, 15, 18
Leigh, N., 8
licence management, 84
list technique, 5
Macfarlane, I., 1, 6, 9
maturity see organisational
maturity measures see Key Performance
Indicators; metrics
Metcalf, J., 6, 7, 54–56, 86
metrics
evaluation, Table 10.1
importance, 129, 132
intangible, 130–131
poorly focused, 38
prevalence, 21
intangible, 129–130
monitor control loop, 135–136
monitoring techniques, process
failure detection, 57–58
naming standards, 106, 129
off-the-shelf solutions, 48, 128
organisation change
as barrier to implementation, 16
managing, 49, 51–52, 128, 131
organisational maturity
assessment, 50
as barrier to implementation, 36
evaluation, 103, Table 10.1
failures and, 61–62
implementation and, 14, 36, 132
stakeholders groups and,
132
organisational structure, 36, 32,
62
pain points, 55
pairwise comparisons, 90
performance
critical success factors, 36–37
improving, 132
metrics, 129–130
Pieri, A., 6, 44–48, 52
pilot studies, 71, 90, 128,
Table 9.1
PMIQ, 5
policies, 135
populaction process
action plan, 104–105
evaluation, 103, Table 10.1
framework definition, 102
gap analysis, 102–103,
103–108
key inhibitors, 104, 109–110
requirements, 71
reviewing, 133
post-implementation review (PIR),
63, 121
presentation layer, 3, 11, 114,
Fig. 2.1, Fig. 11.1
primary supplier integration
popularity, 120, Fig. 11.2
practical requirements, 119
problem management
improvements from CMS, 45,
Fig. 5.1
process failure detection, 59–60
procedures, 135
process owners
barriers to implementation, 39
critical success factors, 38–39
value of CMS for, 30, 125
processes, 135
product evaluation, 90, 91–92, 98
productivity metrics, 130
project managers
barriers to implementation,
41–42
critical success factors, 41
value of CMS for, 30
project teams, 126
proofs of concept, 84
regulatory issues see compliance
relationships
configuration items, 101, 102,
107
identification, 108
management tools, 95
services, 106
release management
benefits from CMS, 24
metrics, 130
reporting
availability, 52
CM failures and, 62
level of, 26, 32, Fig. 3.4
requirements, 69
status reporting, 73
tool support, 97
requirements
CMDB population and, 71
definition, 66
identification see requirements
gathering
ITIL approach, 66
managerial vs operational,
72–73
service management, 68–69
wider organisation, 71
requirements gathering
existing approaches, 72
framework, 67, 73
importance, 66
scope, 67
stakeholders and, 72, 73
tool selection process, 88–89,
126, Table 9.1
top-down approach, 66–67, 73,
132–133
traditional techniques, 72
use case workshops, 67, 68,
69–70, 72, 74, 132–133
resources
in-house integration, 118
tool selection, 86, 87
see also funding
return on investment, 30, 31, 120
reviews, 63–64
risk management, CMS function, 4
risk managers, value of CMS for,
125
risk metrics, 130
Rowe, J.S., 75
Salvage, I., 6, 7, 66–67, 73, 122–123
security issues, 67, 96, 114, 128
senior management teams
buy-in, 14, 18, 39, 73, 80, 127
reporting to, 36, 32
support, 30, 32, 46, 73, 80
value of CMS for, 29–30
see also stakeholders
Service Asset and Configuration
Management (SACM) process, 2–4
circumventing, 127
definition, 126–127
deployment, 110
enforcement, 110
failures see failures of CM
process
improvement workshops,
111–112
improving, 54–65
ITIL value statements, Table 3.1
organisational models, 26, 32
proposed process, 62–63
reporting level, 26, 27
reviews, 63–64
service assets, 2
service catalogue, 2
service delivery and operations
management, critical success
factors, 39
service delivery and operations teams
barriers to implementation, 36
critical success factors, 35–36
value of CMS for, 125, 131, 132

service desks
barriers to CMS acceptance, 37–38
critical success factors, 36–37, 42
process failure detection role, 59
value of CMS for, 30, 125, 131
Service Knowledge Management System
CMS architecture, 114
decision-making role, 11–12,
Fig. 2.2
successful approaches, 12
see also Configuration Management System
service lifecycle controls, failure identification, 61
service management requirements gathering see requirements gathering
generic, 68–69
testability, 69
service managers
barriers to implementation, 39
critical success factors, 38–39
value of CMS for, 125
service owners, accountability, 63
service portfolio, 2
services
definition, 106
identification, 106
ownership, 106
relationships, 106
users, 196
single vendor solutions, 46, 49, 51, 52
Smith, M., 6, 44–48, 52
special interest groups, 64
sponsorship
encouraging, 55
level of, 30, 118, 127
requirement, 80
stakeholders, 10
buy-in, 18, 72, 110
critical success factors, 42–43
expectations, 14, 38
failing CM process and, 55
implementation issues, 14, 18, 127
involvement, 49, 51–52, 55, 73
key, 124–125, 131, Fig. 12.2
organisational maturity and, 132
ownership of CIs, 64
reporting to, 63
requirements gathering, 72, 73
roles and responsibilities, 63
'stickerholder comfort', 73
support, 14
tool selection, 88–89, 93
value of CMS for, 28–30
standards, 52, 67, 131
status reporting, 73
strategic visions
activities, 85–86
benefits, 80
case study, 45, 52, 75–81
choice of CSFs, 34
current position, 77, 85
documenting, 78
enablers, 80
goals and, 76
identifying future states, 77–79, 85
issues addressed, 76
key roles, 80
monetary values in, 84
need for radical innovation, 75, 82, 84–85
objectives, 77
organizational aspects, 75, 84, 85
people and skills aspects, 75, 85
purpose, 131
requirements gathering and, 66–67
smaller organisations, 81–82
SMART objectives, 84
staged transformation, 77–78, 85
starting points, 85
success criteria
agreeing, 50, 67
measuring, 47, 129–131
see also Critical Success Factors
support, evaluation, 10.1
systems, 135
tension metrics, 129
termology, 42
testing
process failure detection, 58–59
of requirements, 69
third party support, 82, 107
Tomkinson, M., 6, 75–76, 80, 85
tools
abstraction and, 94–95
accessibility, 96
adaptability, 95
administration, 97
baselining, 94
business benefits, 94
CMS architecture and, 95
common requirements, 93–97
cost-effectiveness, 94
costs, 88
customisation, 97
discovery, 1, 51, 58
distribution support, 95
functions, 95
flexibility, 95
governance support, 88, 94, 99
installation, 97
integration, 49, 95, 128
integrity, 95
lifecycle support, 94
non-invasiveness, 97
presentation, 97
prevalence, 22
process improvement, 60–61, 64
process support, 96
relationship management, 95
reporting, 97
resilience, 95
scalability, 15, 95
security, 96
selection see tool selection
process
service structure support, 94
supplier support, 97
training, 97
usability, 97
views, 97
unauthorised changes, 60
use case workshops
requirements gathering, 67, 68,
69–70, 72, 74, 132–133
tool selection, 88, 98
use cases, 67–68, 74
generic, 70, 71
user forums, 64
value of CMS
architects, 30
business representatives, 29
compliance managers, 125
ITIL value statements, 22,
Table 3.1, Table 2
measurement, 19
process owners, 30, 125
project managers, 30
research project, 19–27, 30–31
risk managers, 125
senior management team, 29–30
service delivery and operations teams, 125, 131, 132
service desks, 90, 125, 131
service managers, 125
stakeholders, 28–30
vendor solutions see primary supplier integration
version control, 134
virtualisation, 106
visions see strategic visions
warranty claims, 25
This book is invaluable to IT Service Management professionals. It includes expert feedback from practitioners who have implemented configuration management in a wide range of environments.

Configuration management is the tracking, recording and monitoring of the elements of a business IT system and any changes and developments. It contains details of the organisation’s infrastructure and processes that are used in the provision and management of IT services and is the vital underpinning for IT governance. In general, the book follows the ITIL® V3 approach and is based on the interactive stream of the CMSG/itSMF Conference, ‘The CMDB and CMS: The Powerhouse of Service Management’.

- Essential knowledge for all IT departments
- Solid theory merged with practitioner feedback
- Applies to a wide range of real environments
- Great advice from world experts

ABOUT THE AUTHORS
Shirley Lacy is a co-author of the ITIL Service Transition book and director of ConnectSphere. She is the UK Principal Expert on the ISO Working Group for Process Assessment standards for software, systems and service management. She has worked for organisations across a range of sectors including the BBC, GlaxoSmithKline, Capgemini and Vodafone.

David Norfolk MBCS CITP is currently a journalist and an industry analyst with Bloor Research. He has worked in the public sector and in banking.