

# Service Level Management and its link to CobiT's DS1 (Define and Manage Service Levels) and to DS2 (Manage Third-Party Services) Processes

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**Abstract:** *Delivering cost-effective, consistent, and reliable IT services is becoming increasingly business critical. Even with rapid technology advancements, many business customers feel that IT is failing them, and they are struggling for a way to address their concerns.*

*Businesses and IT departments must understand the effect they have on one another. Their respective demands and expectations must be defined and agreed on. The most effective way of managing this is through the Service Level Management process.*

*Service Level Management is a defined process that enables the IT department to deliver exactly what is expected of it and to ensure that these services are recognized as beneficial to the business. IT can facilitate effective cost management of the services, focus on the full range of services available, monitor the service components, and ensure that the service is delivered through monitoring, reporting, and developing knowledge of the services that are offered.*

*The current version of ITIL is especially strong when it comes down to the description of concept and processes that outlines how IT-services are delivered. In return CobiT is strong when the issue is controls and metrics, which cover metrics and benchmarking. Combining these two approaches may bring good results.*

*To be successful, the business side of an organization has to be involved in and committed to what IT does. To deliver the services an organization needs, IT has to be managed by the business as a business. This is the core issue of IT governance.*

**Keywords:** CMM, CobiT, Define and Manage Service Levels, DS1, DS2, ITIL, KPI, KGI, Manage Third-Party Services, Service Level Agreement, Service Level Management, SLM, SLA, IT Governance

## **Main goal of this article**

This paper aims to bring together the two approaches of ITIL and CobiT and to show on the example of Service Level Management process its possible interconnections, interfaces and intersections with CobiT domains. Furthermore, this paper shows how ITIL and CobiT may be used to support IT Governance. To sum up, this article will provide you with practical example of an ITIL vs. CobiT mapping and rather general and theoretical discussion about how may this approach be used for IT Governance benefit.

The target group for this paper is IT managers, IT-auditors, but it may also be valuable for consultants within management and IT.

## 1. What are the links between ITIL and CobiT and what is it good for?

### 1.1 ITIL

ITIL (IT Infrastructure Library) is the most widely accepted approach to IT Service Management in the world. ITIL is a series of eight books which is referred to as the only consistent and comprehensive best practice for IT service management. Although published by a governmental body, ITIL is not a standard. The best practice processes promoted in ITIL both support and are supported by the British Standards Institution's Standard for IT Service Management (BS15000).

The first versions of the ITIL collection were published by the British Office of Government Commerce (OGC), which still holds the ITIL trademark. The OGC was commissioned to develop a methodology for efficient and effective use of IT resources within the British government.

(For any further information see: <http://www.ogc.gov.uk>)

#### Goal

The goal is the development of a vendor-independent approach for service management. The ethos behind the development was the recognition of increased dependence on IT, which has to be managed by high quality IT services.

The main idea of the ITIL is depicted on following picture – ITIL Framework.

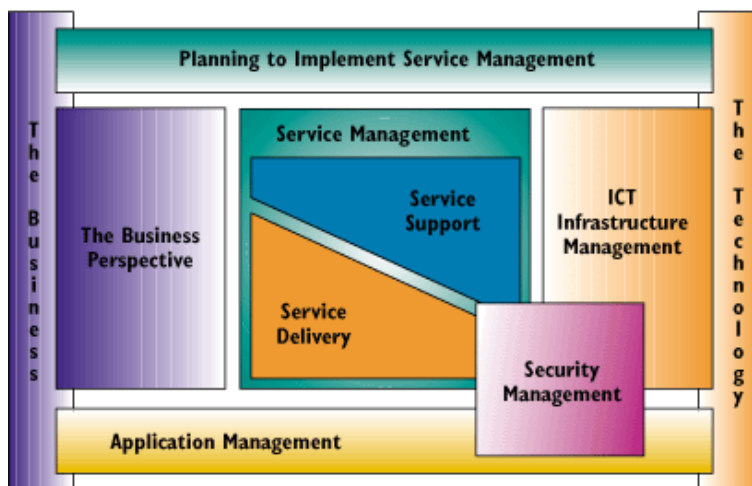


Fig. 1: ITIL Framework

Publications available within the ITIL framework are:

- Service Support
- Service Delivery
- Security Management
- ICT Infrastructure Management

- Application Management
- The Business Perspective
- Software Asset Management
- Planning to implement Service Management

Together they support implementation, assessment and development of IT-services.

The core processes of IT management are described within the two ITIL books Service Support (blue book) and Service Delivery (red book). The description of the processes is not standardized and thus not consistent. Not all processes contain metrics or key performance indicators, a description of the roles and activities or guidelines for implementing the process.

When you study an ITIL publication it will consist of several sub-areas that in turn, depending on what sub-area you are looking at, can cover some of following sections: Concept description, process description, activities, cost/benefit issues, proposal for review & monitoring and interface with other sub-areas within ITIL. For some sub-areas other sections have been defined to support the design of how to deliver high quality services.

Processes described within ITIL Service Support and Service Delivery books are depicted on the following picture.

### ITIL Service Management Processes

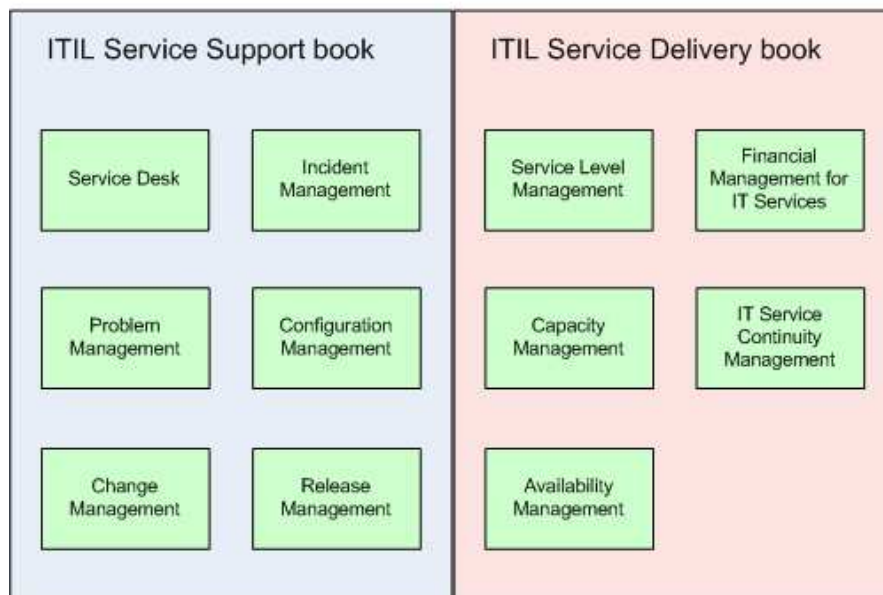


Fig. 2: ITIL processes within Service Support and Service Delivery books

## 1.2 CobiT

Control Objectives for Information and Related Technology (CobiT) is IT Governance, control framework and maturity model. CobiT's purpose is to ensure IT resources are aligned with an enterprise's business objectives so that services and information, when delivered, meet quality, fiduciary and security needs. It is also intended to provide a mechanism to balance IT risks and returns. CobiT defines 34 significant processes, links 318 tasks and activities to them, and defines an internal control framework for them all.

### Goal

"The COBIT Mission: To research, develop, publicize and promote an authoritative, up-to-date, international set of generally accepted information technology control objectives for day-to-day use by business managers, IT professionals and assurance profession"

CobiT's processes and control objectives are segmented into four domains (see Figure):

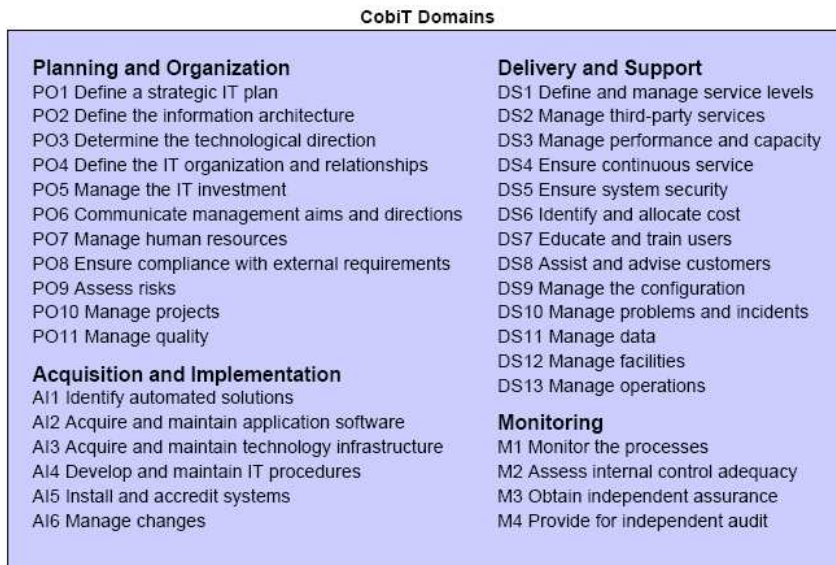
- Planning and Organization (PO)
- Acquisition and Implementation (AI)
- Delivery and Support (DS)
- Monitoring (M)

For each domain, subdomains have been defined to describe requirements and tools to monitor the IT process. The sub-domains that have been defined will provide you with guidance to manage the IT process. It covers issues like Critical Success Factors (CSF), Key Performance Indicators (KPI), Key Goal Indicators (KGI) and Maturity Models (CMM).

The framework can be approached from three vantage points, described as dimensions in a cube that consists of IT-processes (domains, processes, activities), IT-resources (people, applications/systems, technology, facilities, data) and Information Criteria (quality, fiduciary, security).

CobiT publications currently available cover:

- CobiT Framework,
- CobiT Executive Summary,
- CobiT Management Guidelines,
- CobiT Control Objectives,
- CobiT Audit Guidelines and
- CobiT Implementation Tool Set.
- Additional publications have also been issued for:
  - CobiT Security Baseline,
  - CobiT Quickstart and
  - IT Governance Implementation Guide.



Source: The Information Systems Audit and Control Association

Fig. 3: CobiT Domains and processes of each

### 1.3 Links between ITIL and CobiT

CobiT can be used by business or IT management, but its origins are as an auditor's tool — it was developed by the Information Systems Audit and Control Association ([www.isaca.org](http://www.isaca.org)), which is an international organization based in the United States. More recently, the IT Governance Institute ([www.itGovernance.org](http://www.itGovernance.org)) has made some contributions. CobiT is often introduced in an enterprise via the audit route.

CobiT is based on established frameworks, such as the Software Engineering Institute's Capability Maturity Model known as CMM, ISO 9000 and, most importantly in this context, the Information Technology Infrastructure Library (ITIL). However, CobiT does not include control guidelines or practices, which are the next level of detail. Unlike ITIL, CobiT does not include process steps and tasks because it is a control framework rather than a process framework. CobiT focuses on what an enterprise needs to do, not how it needs to do it, and the target audience is auditors, senior business management and senior IT management.

ITIL is based on defining best-practice processes for IT service delivery and support, rather than defining a broad-based control framework. It focuses on the method. ITIL has a much narrower scope than CobiT because of its focus on IT service management, but it defines a more-comprehensive set of processes within that narrower field of service delivery and support. ITIL is more-prescriptive about the tasks involved in those processes and, as such, its primary target audience is IT and service management.

The principles behind the CobiT and ITIL frameworks are consistent. Auditors often use CobiT in combination with the ITIL self-assessment workbook to assess the service management environment. CobiT provides a set of key goal and

performance indicators, and critical success factors for each of its processes. These add value to ITIL because they establish the basis for managing the ITIL processes. Some enterprises have combined the two to provide a more-comprehensive IT Governance and operations framework.

According to Gartner [12] many of the CobiT processes — particularly those in the delivery and support domain, such as DS1, DS3, DS4, DS8, DS9 and DS10 — map well onto one or more ITIL processes, such as service level, configuration, problem, incident, release, capacity, availability or financial management. Similarly, the A16 change management process maps well onto ITIL's change management process and other supporting processes, such as release management.

ITIL lacks direct coverage in the other three CobiT domains, but it does contribute to some of them within its narrower focus of IT service management. For example, ITIL emphasizes consistent communications and the participation of the user community. Similarly, CobiT's principles of managing quality are consistent with ITIL's inherent quality-based approach. ITIL does not cover project management (CobiT's PO10), but this is covered by Projects in Controlled Environments (initially PRINCE, now PRINCE2), a project management methodology developed as well by OGC. PRINCE2 is an established standard used by the U.K. Government and private businesses. The development processes of the two frameworks are not linked and both would benefit from closer collaboration. However, they are unlikely to contradict each other in any substantive way.

CobiT and ITIL are not mutually exclusive and can be combined to provide a powerful IT Governance, control and best-practice framework in IT service management. Enterprises that want to put their ITIL program into the context of a wider control and Governance framework should use CobiT.

## **2. Service Level Management Process and Activities**

Service Level Management aligns business needs with the delivery of IT services. It provides the interface with the business that allows deliver IT solutions that are in line with the requirements of the business and at an acceptable cost. The goal of Service Level Management is to successfully deliver, maintain, and improve IT services.

Service level management requires the participation and support of many resources. A successful implementation has an established business need, commitment from all those involved, and funding to ensure adequate resources and tools for completion. It requires a strategy and a flexible plan for negotiating, implementing, and maintaining service level agreements (SLAs).

The typical motivation for SLM is the need to improve IT service delivery as perceived by customers. In many cases, the team responsible for IT service delivery does not have all the information required to meet the needs of the business. As a result, IT delivers and reports on top quality service, while business units experience service that is perceived to be of a low quality.

Executive management commitment for SLM is essential since the goal of aligning IT and business requires an organization-wide commitment from both business and IT representatives. It takes hard work and discipline to implement SLM. Simply providing funding is not enough. Executive management can facilitate commitment

during the entire SLM planning and implementation cycle by continually motivating the change and leading by example.

Service Level Management aims to align and manage IT services through a process of definition, agreement, operation measurement, and review. The scope of Service Level Management includes defining the IT services for the organization and establishing Service Level Agreements (SLAs) for them. Fulfilling SLAs is assured by using Underpinning Contracts (UCs) and Operational Level Agreements (OLAs) for internal or external delivery of the services. Introducing Service Level Management into a business will not give an immediate improvement in the levels of service delivered. It is a long-term commitment. Initially, the service is likely to change very little; but over time, it will improve as targets are met and then exceeded.

### **Description**

Service Level Management is the processes of planning, coordinating, drafting, agreeing, monitoring and reporting on Service Level Agreements (SLAs), and the ongoing reviewing of service achievements to ensure that the required and cost-justifiable service quality is maintained or where necessary improved. SLAs provide the basis for managing the relationship between the provider and the Customer.

With a sound service level management, clear interfaces and specification of services are defined with customers (senior management). Users and internal as well as external suppliers are defined and managed. Internal operational level agreements and contracts with external suppliers facilitate adherence to negotiated service level agreements.

### **Goal**

The goal of the Service Level Management is to ensure the compliance of the services delivered with the level of services demanded and agreed upon.

### **Major Tasks**

- Record the service level requirements (SLR).
- Ensure the delivery of the service level required by establishing or updating a service quality plan (SQP), contracts with third parties and operational level agreements (OLA).
- Contract SLAs.
- Monitor the level of services provided.
- Improve service quality.
- Establish and maintain the service catalog.

If an organization wants to implement Service Level Management, it must first assess what services IT provides to the organization's customers and determine what existing service contracts are currently in place for these services. This assessment can make the IT service department aware, often for the first time, of the full range of services it is expected to deliver. With the information gained through this exercise, the organization can then develop and implement the full benefits of the Service Level Management process.

Service Level Management requires that the IT organization fully understand the services it offers. Implementing Service Level Management follows these steps:

- Creating a service catalog
- Developing SLAs

- Monitoring and reporting
- Performing regular service level reviews

The SLA is developed in line with the requirements and priorities of the services documented in the service catalog, the requirements specified under negotiation of the SLAs, the monitoring of the service against the agreement criteria, and the reporting and reviewing of this information to highlight and remove failures in the levels of performance of the service.

The Service Level Management Process is shown on the picture below.

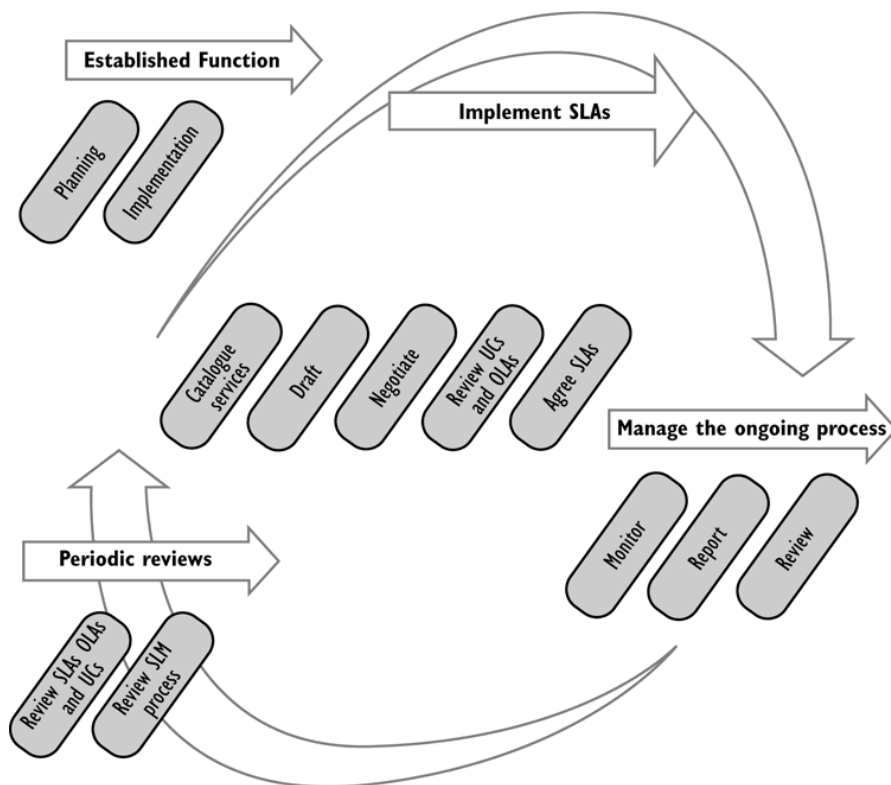


Fig. 4: ITIL Service Level Management Process and its activities  
(Source: ITIL Service Delivery book, OGC)

### 3. CobiT processes DS1 & DS2 – brief overview

Controlled Objectives for Information and Related Technology (CobiT) is an authoritative framework developed over the past 10 years by some of the most influential players in the financial audit industry.

CobiT is an open standard and is platform independent. It has been developed to promote the effective Governance of IT by senior management and assure an

optimum balance between the value derived from the effective and efficient deployment of IT and the serious risks that can manifest when IT is not managed responsibly.

CobiT is based on over 40 international standards and is supported by a network of 150 IT Governance chapters operating in over 100 countries.

CobiT describes 34 high-level IT processes clustered into 4 process domains:

- Planning and Organization,
- Acquisition and Implementation,
- Delivery and Support,
- Monitoring.

For each of the 34 processes CobiT details recommended control objectives, Key Performance Indicators (KPIs), Key Global Indicators (KGIs), Critical Success Factors (CSFs) and maturity models.

The Delivery and Support domain contains a DS1 Define and Manage Service Levels and DS2 Manage Third-Party Services.

### 3.1 DS1 Define and Manage Service Levels

#### Business requirement

To establish a common understanding of the level of service required.

**Is enabled by** the establishment of service-level agreements which formalize the performance criteria against which the quantity and quality of service will be measured.

#### Takes into consideration:

- formal agreements
- definition of responsibilities
- response times and volumes
- charging
- integrity guarantees
- non-disclosure agreements
- customer satisfaction criteria
- cost/benefit analysis of required service levels
- monitoring and reporting

A Service Level Agreement (SLA) is a formal contract between the IT function and the user to perform certain tasks as agreed upon measurable criteria. Service level commitments from the IT function should be formalized with users and include performance procedures, monitoring and reporting, chargeable items, and service improvement programs. There should also be regular reviews of SLAs.

### 3.2 DS2 Manage Third-Party Services

#### Business requirement

To ensure that roles and responsibilities of third parties are clearly defined, adhered to and continue to satisfy requirements.

**Is enabled by** control measures aimed at the review and monitoring of existing agreements and procedures for their effectiveness and compliance with organization policy.

**Takes into consideration:**

- third-party service agreements
- contract management
- non-disclosure agreements
- legal and regulatory requirements
- service delivery monitoring and reporting
- enterprise and IT risk assessments
- performance rewards and penalties
- internal and external organizational accountability
- analysis of cost and service level variances

Formal contracts, continuity of service guarantees and security agreements must exist. Management should ensure that all third-party providers' services are properly identified and an owner assigned responsibility for ensuring quality of the relationship with third-parties.

## **4. Mapping SLM and DS1& DS2**

Now, when I have outlined the key content of each process or domain discussed, I would like to introduce a process mapping, which I have developed over a one-year experience on an ITIL & CobiT focused project in commerce enterprise.

The mapping is done from the perspective of CobiT detailed control objectives for each process and its links to relevant part of the ITIL Service Level Management process. The key target of this mapping is to pinpoint main gaps in between and, on the other hand, to show the touching points of both.

### **4.1 DS1 Define and Manage Service Levels vs. SLM**

#### **DS1.1 Service Level Agreement Framework**

A framework for SLAs must be defined by management defining quality and quantity of the service, incl. other parameters such as availability, reliability, performance and others.

This control objective is covered by ITIL SLM process, chapters 4.3 Planning the process and 4.4 Implementing the process where steps about how to establish the SLM framework and how to implement it are described.

#### **DS1.2 Aspects of Service Level Agreements**

Explicit agreement should be reached on the aspects that a service level agreement should have.

This control objective is covered by ITIL SLM process, chapter 4.6 SLA Contents and Key Targets. This chapter describes the content and initial key targets for SLA.

#### **DS1.3 Performance Procedures**

Procedures should be put in place to ensure that the relations between all the involved parties are established, coordinated, maintained and communicated to all stakeholders.

This control objective is covered by ITIL SLM process, chapter 4.5.4 Maintenance of SLAs, contracts and OLAs. SLAs, underpinning contracts and OLAs must be kept up to date and under the Change Management control.

#### **DS1.4 Monitoring and Reporting**

Service Level Manager should be appointed by management. He is responsible for monitoring and reporting on achievement of service performance criteria. The monitoring statistics should be analyzed on a timely basis. Appropriate corrective action should be taken and failures should be investigated.

This control objective is covered by ITIL SLM process, chapter 4.5.1 Monitoring and Reporting. Performance criteria are reported in Service Achievement document, circulated to all stakeholder. For this, the Service Level Manager is responsible.

#### **DS1.5 Review of SLAs and Contracts**

Management should implement a regular review process for service level agreements and underpinning contracts with third-party service providers.

This control objective is covered by ITIL SLM process, chapters 4.5.2 Service review meetings and 4.5.4 Maintenance of SLAs, contracts and OLAs.

#### **DS1.6 Chargeable Items**

Provisions for chargeable items should be included in the service level agreements to make trade-offs possible on service levels versus costs.

This control objective is covered by ITIL SLM process, chapter 4.6 SLA Contents and key targets and by the Financial Management for IT service process, chapter 5.4 Developing the Charging system.

#### **DS 1.7 Service Improvement Programme**

Management should implement a process to ensure that users and service level managers regularly agree on a service improvement programme for pursuing cost-justified improvements to the service level.

This control objective is covered by ITIL SLM process, chapter 4.5.3 Service Improvement programme.

### **4.2 DS2 Manage Third-Party Services vs. SLM**

#### **DS2.1 Supplier Interfaces**

Management should ensure that all third-party providers' services are properly identified and that the technical and organizational interfaces with suppliers are documented.

This control objective is covered by ITIL IT Infrastructure Management, chapter 5.3 The roles, responsibilities and Interfaces.

#### **DS2.2 Owner Relationships**

The customer organization management should appoint a relationship owner who is responsible for ensuring the quality of the relationships with third-parties.

This control objective is covered by ITIL SLM process, Annex 4A Service Level Manager – role, responsibilities, key skills.

#### **DS2.3 Third-Party Contracts**

Management should define specific procedures to ensure that for each relationship with a third-party service provider a formal contract is defined and agreed upon before work starts.

This control objective is covered by ITIL SLM process, chapter 4.4.8 Review Underpinning Contracts and Operational Level Agreements.

#### **DS2.4 Third-Party Qualifications**

Management should ensure that, before selection, potential third-parties are properly qualified through an assessment of their capability to deliver the required service (due diligence).

This control objective is out of the ITIL scope, covered by Project Management Methodology.

#### **DS2.5 Outsourcing Contracts**

Specific organizational procedures should be defined to ensure that the contract between the facilities management provider and the organization is based on required processing levels, security, monitoring and contingency requirements, and other stipulations as appropriate.

This control objective is covered by ITIL SLM process, chapter 4.4.8 Review Underpinning Contracts and Operational Level Agreements.

#### **D 2.6 Continuity of Services**

With respect to ensuring continuity of services, management should consider business risk related to the third-party in terms of legal uncertainties and the going concern concept, and negotiate escrow contracts where appropriate.

This control objective is covered by ITIL IT Service Continuity Management process, chapter 7.3.2 Stage 2 – Requirements Analysis and Strategy Definition.

#### **DS2.7 Security Relationships**

With regard to relationships with third-party service providers, management should ensure that security agreements (e.g., non-disclosure agreements) are identified and explicitly stated and agreed to, and conform to universal business standards in accordance with legal and regulatory requirements, including liabilities.

This control objective is covered by ITIL Security Management Process.

#### **DS2.8 Monitoring**

A process for monitoring of the service delivery of the third-party should be set up by management to ensure the continuing adherence to the contract agreements.

This control objective is covered by ITIL SLM process, chapters 4.5.1 Monitoring and Reporting and 4.5.2 Service Review Meetings.

### **4.3 The DS1, DS2 vs. SLM map**

In the picture below I have outlined the mapping of CobiT detailed control objectives onto chapters of Service Level Management process as described within the Service Delivery book.

ITIL		Service Delivery				
CobIT	Mapping CobiT DS1 and DS2 onto ITIL Service Delivery book	Service Level Management	Financial Mng. for IT services	Capacity Management	IT Service Continuity Mng.	Availability Management
<b>DS 1</b>	<b>Define and Manage Service Levels</b>	<b>4.</b>	<b>5.</b>			
DS 1.1	Service Level Agreement Framework	4.3, 4.4				
DS 1.2	Aspects of Service Level Agreements	4.6				
DS 1.3	Performance Procedures	4.5.4				
DS 1.4	Monitoring and Reporting	4.5.1				
DS 1.5	Review of SLAs and Contracts	4.5.2 4.5.4				
DS 1.6	Chargeable Items	4.6	5.4			
DS 1.7	Service Improvement Programme	4.5.3				
<b>DS 2</b>	<b>Manage Third-Party Services</b>	<b>4.</b>			<b>7.</b>	
DS 2.1	Supplier Interfaces	Covered by IT Infrastructure Management book, chapter 5.3				
DS 2.2	Owner Relationships	Annex 4A				
DS 2.3	Third-Party Contracts	4.4.8				
DS 2.4	Third-Party Qualifications	Out of the ITIL scope, covered by Project Management Methodology				
DS 2.5	Outsourcing Contracts	4.4.8				
DS 2.6	Continuity of Services				7.3.2	
DS 2.7	Security Relationships	Covered by Security Management				
DS 2.8	Monitoring	4.5.1 4.5.2				

Fig. 5: Mapping CobiT DS1 and DS2 processes onto ITIL Service Delivery book

## 5. Challenges and Constraints

Within this paper I have shown my approach to how may be ITIL and CobiT linked together. Chapter 2.3 describes general links between ITIL and CobiT according to Gartner [12] and Chapter 5 represents an example of my approach to such mapping.

As was mentioned above, ITIL and Cobit are not 100% complementary hence there are some overlaps and "white places" in between. On the other way, CobiT and ITIL can be integrated to get the benefits of both.

In my experience, the detailed mapping of ITIL and CobiT processes is a private know-how of consulting companies who are not willing to disclose it publicly because it creates a basis for its consulting services. Nevertheless there are some sources, which provide at least very high-level mapping overview. One of this sources is [11] CobiT Mapping - Overview of International IT Guidance, where the mapping is done to the detail of three levels of addressing (frequently, moderately, not or rarely) the CobiT Processes and Domains, Information Criteria and IT

Resources by ITIL and some other standards (such as ISO/EC 17799:2000, COSO and some others).

According to Chapter 2.3 Links between ITIL and CobiT based on [12], only information on whether or not the process is covered is provided.

The Pink Roccade company has published its high level view on CobiT x ITIL mapping in its whitepaper [13] where the coverage of the processes is depicted in three colors (green – completely covered, red – not at all covered, amber – partially covered). We can assume that a detailed framework which is the know-how of the company is hidden behind this high level picture.

To sum up, nowadays there is no publicly available map of ITIL x CobiT processes. One of the possible reasons why is that the map is considered to be the business know how of each consulting company. On the other hand ITIL and CobiT frameworks are widely public accessible and still there are a lot of projects on its implementation. In my opinion, the reason for public non existence of such framework is first it has not been officially created and approved; and second the approach how to deal with specifics issues was not identified yet.

The UK Office of Government Commerce who now owns ITIL is aware of these issues. Therefore for the next release of ITIL (version 3) which is announced for the 2006, incorporating metrics into processes is considered now. The idea is not to substitute CobiT framework, but rather align interfaces for better cooperation of both.

## 6. ITIL vs. CobiT mapping as a tool for IT Governance

Nowadays many frameworks, best practices, methodologies and standards describe the environment for IT. However, there is no common framework comparing them. In the practical example above I have illustrated how may be ITIL and CobiT processes and domains mapped over. Being able to map the frameworks helps the organization to deploy benefits of both. In this chapter I want to pinpoint how may be these interrelations between frameworks used as a powerful tool for IT Governance.

### 6.1 What is IT Governance

**Definition:** IT Governance is the responsibility of the Board of Directors and executive management. It is an integral part of enterprise Governance and consists of the leadership and organizational structures and processes that ensure that the organization's IT sustains and extends the organization's strategy and objectives. [8]

#### IT Governance Lifecycle

The IT Governance Lifecycle may be described in following steps:

1. Strategic Alignment - aligning with the business and providing collaborative solutions
2. Value Delivery - focus on IT expenses and proof of value
3. IT Asset Management - knowledge, infrastructure and partners
4. Risk Management - safeguarding assets and disaster recovery
5. Performance Measurement - IT Scorecards

#### IT Governance Actions

- Align IT strategy with business goals
- Cascade strategy and goals down into the organization

- Set up organizational structures that facilitate strategy implementation, alignment and value delivery
- Adopt a risk, control and Governance framework
- Embed responsibilities for risk management in the organization
- Measure performance (Balanced Business Scorecard)

In connection with IT Governance many questions arise. One of the key ones is how to pragmatically implement IT Governance. It can be deployed using a mixture of various structures, processes and relational mechanisms. When designing IT Governance for an organization, it is important to recognize that it is contingent upon a variety of sometimes conflicting internal and external factors. Determining the right combination of mechanisms is, therefore, a complex endeavor and it should be recognized that what works for one company does not necessarily work for another. This means that different organizations may need a combination of different structures, processes and relational mechanisms.

To be able to place IT Governance structures, processes and relational mechanisms in a comprehensible relationship to each other, the framework displayed in figure 1. is proposed. This is based on Peterson's framework [9]. Structures involve the existence of responsible functions such as IT executives and a diversity of IT committees. Processes refer to strategic decision-making and monitoring. The relational mechanisms include business/IT participation, strategic dialogue, shared learning and proper communication.

<b>Structures, Processes and Relational Mechanisms for IT Governance</b>				
	<b>Structures</b>	<b>Processes</b>	<b>Relational Mechanisms</b>	
<b>Tactics</b>	IT Executives and accounts Committees and councils	Strategic IT decision – making Strategic IT monitoring	Stakeholder participation Business / IT partnerships	Strategic dialog Shared learning
<b>Mechanisms</b>	<ul style="list-style-type: none"> <li>• Roles and responsibilities</li> <li>• IT Organization structure</li> <li>• CIO on board</li> <li>• IT strategy committee</li> <li>• IT steering committee(s)</li> </ul>	<ul style="list-style-type: none"> <li>• Strategic information systems planning</li> <li>• Balanced (IT) Scorecards</li> <li>• Information economics</li> <li>• Service Level Agreements</li> <li>• CobiT and ITIL</li> <li>• IT alignment / Governance maturity models</li> </ul>	<ul style="list-style-type: none"> <li>• Active participation by principal stakeholders</li> <li>• Collaboration between principal stakeholders</li> <li>• Partnership rewards and incentives</li> <li>• Business / IT colocation</li> </ul>	<ul style="list-style-type: none"> <li>• Shared understanding of business / IT objectives</li> <li>• Active conflict resolution (non-avoidance)</li> <li>• Cross – functional business / IT training</li> <li>• Cross functional business / IT job rotation</li> </ul>

Fig. 6: Peterson's Framework for IT Governance

## 6.2 How can be CobiT and ITIL combined for IT Governance benefit

With no doubt IT Governance is very important these days. To deploy IT Governance into the organization a number of control frameworks must be identified and implemented. Among these are namely:

- Information management policies
  - Corporate—privacy, business process owners, records retention
  - IT department—SDLC, security
- Standards—CobiT, ITIL, ISO
- Practices and procedures
- System documentation management
- Quality assurance
- Regulatory compliance
  - Escalation procedures
  - Disclosure procedures
- Contract administration and vendor management.

Since many of these documents are company specific I want to pinpoint the importance on ITIL and CobiT in this paper.

As shown above in the mapping practical example, there are many touching points between CobiT and ITIL we can benefit from when invoking IT Governance. The following table was taken from the IT Governance Implementation Guide [10]. I have changed it slightly enhancing it with the ITIL part.

<b>IT Governance Life Cycle</b>			
<b>IT Governance Domain</b>	<b>Objective</b>	<b>CobiT Components to Assist</b>	<b>ITIL Components to Assist</b>
<b>Alignment</b>	Direct Ability to build the capabilities necessary to deliver business value	Business and IT Key Goal Indicators	Service Delivery The Business Perspective Planning to implement Service Management
<b>Value Delivery</b>	Create Successful delivery of business value	Key Performance Indicators CobiT Process Framework Critical Success Factors	Service Support ICT Infrastructure Management Applications Management Software Asset Management
<b>Risk Management</b>	Protect Identification and mitigation risks to preserve value	Control Objectives Control Practices	Security Management IT Service Continuity Management
<b>Resource Management</b>	Act Establishment and deployment of IT capabilities fro business needs	Maturity Model Critical Success Factors Control Objectives Control Practices	Availability Management Capacity Management Financial Management for IT Services
<b>Performance Management</b>	Monitor Closing the feedback loop to redirect alignment if needed	IT Balanced Scorecard CobiT Benchmark Maturity Model Audit Guidelines	Service Level Management Service Desk

Fig. 7: Mapping IT Governance Lifecycle with CobiT and ITIL

In the table above I have depicted how the IT Governance Domains (defining its objective) are covered within CobiT and ITIL. This shows links in between the frameworks on very general level. The framework shown above is not definite, it should be perceived rather as a guideline since it is in very rough detail.

IT management carries the responsibility of governance within the IT department but must also play a larger role in executing the oversight of IT-dependent enterprise governance activities. To be able to perform this, IT management needs a defined process and framework for IT Governance. Automated actions for monitoring and record keeping are more than just recommended in today's complex environment.

While ITIL provides good basis for the processes itself, CobiT creates sound ground for performance indicators and monitoring. To sum up, IT Governance is another reason for accepting CobiT and ITIL as two complex frameworks which interconnection (or mapping) is beneficial.

## 7. Conclusion and Summary

I have focused on introducing two widely spread frameworks for IT within this paper: CobiT and ITIL. The main goal was to demonstrate on a practical example the possibility of mapping processes of both. Furthermore I included a brief discussion about how this may support IT Governance.

The example of process mapping was shown on ITIL Service Level Management process and CobiT DS1 Define and Manage Service Levels and DS2 Manage Third-Party Services. I have decomposed the DS1 and DS2 processes into the level of its detailed controls objectives and then I have assigned a proper chapter of ITIL Service Delivery book (which describes, among others, Service Level Management Process). Any references out of the scope of the Service Delivery book were just briefly mentioned.

The main contribution of this paper on the topic discussed is approach demonstrated in the mapping part of the work (Chapter 5 and 6) since there is no publicly available detailed CobiT x ITIL mapping. The paper has also stressed touching points and gaps of both frameworks. Moreover, this paper shows how ITIL and CobiT components may assist to IT Governance domains.

I intention was to draw attention to the fact that nowadays we are getting used to implement either ITIL or CobiT frameworks or both, but rather standalone than in cooperative connection. The main idea demonstrated in this paper shows mutual intersection of ITIL and CobiT as beneficial for the company for covering IT processes reasonably.

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