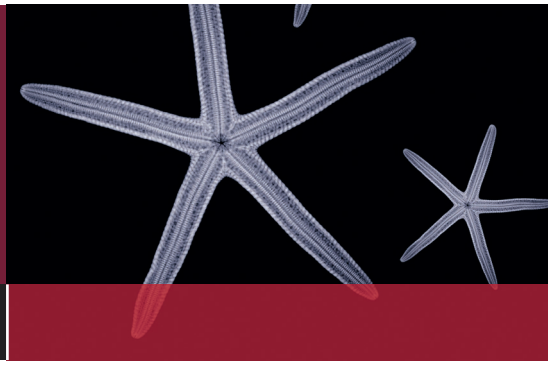
Best Management Practice
For IT Service Management



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Office of Government Commerce

ITIL® V3 and ASL

Sound Guidance for Application Management and Application Development

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Alignment White Paper January 2008

Abstract

In May 2007, the Office of Government Commerce (OGC) released a new version of ITIL. Aspects of Application Management are to be found in all five volumes of the core guidance. In this paper, the interfaces with another IT framework, the Application Services Library, are more described. There are both similarities and differences between ITIL and ASL.

Both frameworks recognize added value in the other and the ASL BiSL Foundation and TSO, the publisher of ITIL, have produced this white paper in order to provide guidance and understanding about the synergy and distinctness of each framework. This publication explains how both ITIL v3 and ASL define and address the Applications domain and provide the reader with an insight into how the frameworks can best be applied. Living Apart Together could qualify the relationship between ITIL v3 and ASL. They both have many common interests and frequently (have to) interact but it's also nice to have a home of your own.

Contents

Introduction and conclusions

Essentially, all models are wrong, but some are useful.

George E. P. Box

In May 2007, the Office of Government Commerce (OGC) released a new version of ITIL. Now known as the ITIL Service Management Practices, and commonly referred to as ITIL V3, brought together the former practices of ITIL and new industry practices in IT Service Management into a comprehensive service lifecycle. One of the changes in the new version of ITIL is the formalized practice of Application Management into the service lifecycle. Aspects of Application Management are to be found in all five volumes of the core guidance.

In this paper, the interfaces with another IT framework, the Application Services Library, are described. There are both similarities and differences between ITIL and ASL.

Both frameworks recognize added value in the other and the ASL BiSL Foundation and TSO, the publisher of ITIL, have produced this white paper in order to provide guidance and understanding about the synergy and distinctness of each framework. This publication explains how both ITIL V3 and ASL define and address the Applications domain and provide the reader with an insight into how the frameworks can best be applied.

The most important conclusions are summed up in the following paragraphs.

The new version of ITIL views the IT Service Management domain by primarily describing the phases of the service lifecycle. Within this perspective it uses processes that detail parts of one or more phases. Alongside processes, descriptions of organizational functions and activities are also used to provide guidance. ASL is primarily a process model, focusing on Application Management and the maintenance part of Application Development but with clear interfaces to the adjoining IT management domains Business Information Management and Infrastructure Management.

Much of the content of ITIL is very generic, with detailed descriptions of the principles and more attention to subjects that are relevant to the application domain. This changes the perception of the previous versions that ITIL was primarily meant for Infrastructure Management to a perception that it is intended to support all IT services.

The ITIL publications give sufficient guidance for organizations that manage commercial-off-the-shelf applications but if an organization maintains the applications and therefore actually modifies the source code, then ASL provides additional and necessary guidance.

ASL and ITIL use the terms Application Management and Application Development in different ways: ASL positions Maintenance (including enhancement and renovation) within the scope of Application Management and defines Application Development as the function that produces new applications, not releases of existing applications. ASL sees advantages in clustering Operational Management of applications with Application Maintenance while ITIL prefers to separate them and cluster Application Maintenance with development of new applications.

	ITIL	ASL
Developing new applications	Application Development	Application Development
Maintaining existing applications	Application Development	Application Management
Operational management of applications	Application Management	Application Management

Mapping of the relative value of ASL and ITIL to the ITIL Application Management Lifecycle shows similarities and areas of added value in both models.

Added Value ITIL	Similar Value	Added Value ASL
Requirements		
	Design	
		Build
	Deploy	
Operate		
	Optimize	

The demarcation between customer (the business) and supplier of IT services is more explicitly drawn in ASL than in ITIL. This gives a different perspective, which can be of added value. Other points of interest in ASL are the specific Application Management/Maintenance processes and examples, the limited scope (primarily Application Management/Maintenance) and the fact that the language used will probably appeal more to people in the Applications domain than the generic ITIL approach. ITIL describes processes and activities that are common to both models (such as Availability Management, Capacity Management, Requirements Engineering and Data & Information Management) in more detail than ASL. Both models address strategic aspects: ITIL addresses the generic service strategy while ASL focuses on the application strategy, using process descriptions.

'Living Apart Together' could qualify the relationship between ITIL V3 and ASL. They have many common interests and frequently (have to) interact but it's also nice to have a home of your own.

ITIL V3

ITIL V3 provides guidance for the IT Service Management domain, which includes Application Management - and good practice for certain aspects of Application Development and Maintenance. Most of this guidance focuses on creating repeatable, measurable practices, processes and organizational functions for the provision of IT services. ITIL revolves around IT services. An IT service often consists of IT components such as infrastructure, data and applications that are produced outside the IT Service Management domain.

ITIL V3 explains in five volumes how to:

- Determine which IT services should be provided (Service Strategy)
- Create or change services and service management processes (Service Design)
- Validate Services utility and warranty and transition them into the live environment (Service Transition)
- Provide the services in an efficient and effective manner (Service Operation)
- Ensure that the services keep addressing future needs (Continual Service Improvement).

The five volumes reflect the Service Lifecycle, a dominant notion in ITIL V3.

Note: From now on in this document, 'ITIL' is used to denote ITIL V3.

The Service Lifecycle

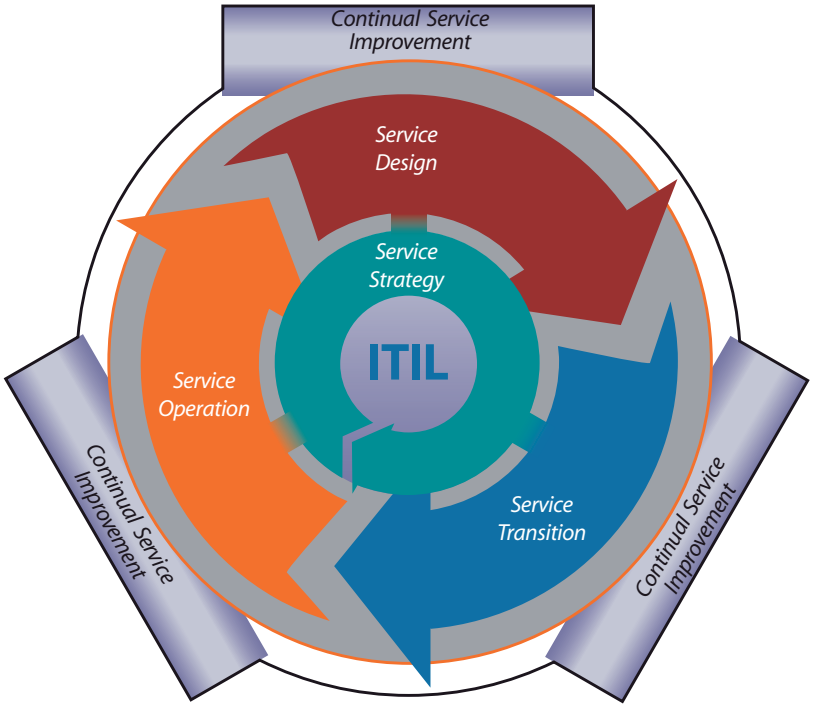
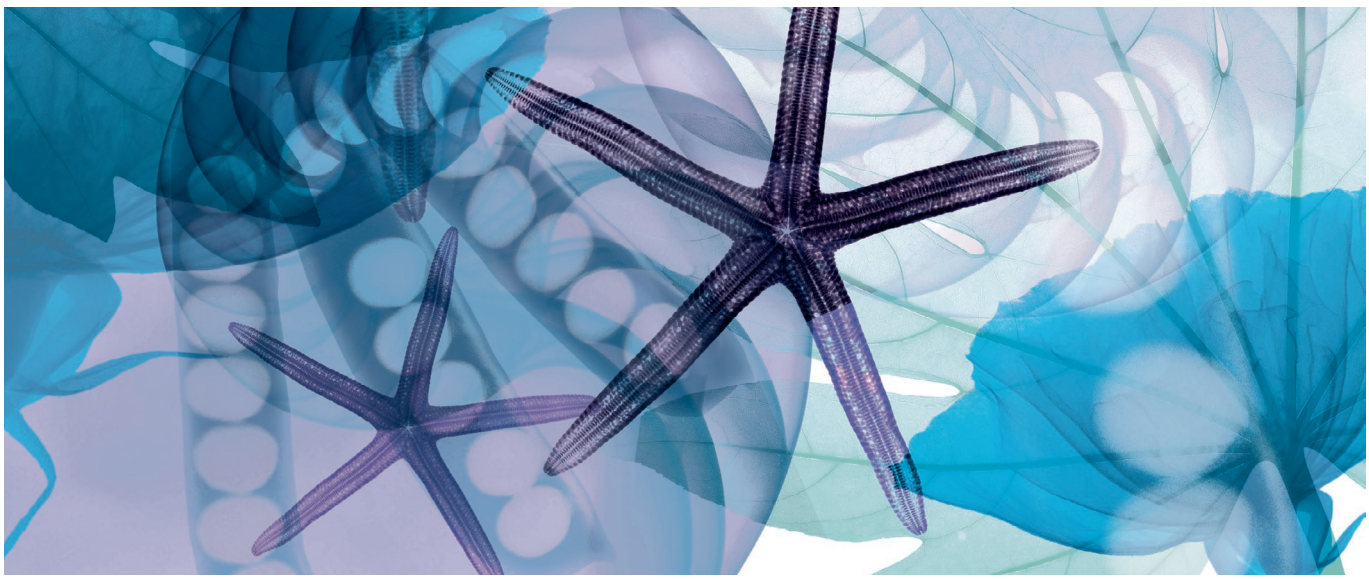


Figure 1: ITIL Service Lifecycle and the publications



IT Service Chain

IT Service Providers provide IT Service of value to the Business Organization. They do this by executing IT Service Management, using an appropriate mix of assets. These include various Resources and Capabilities: Management, Organization, Process, Knowledge, People, Information, Applications, Infrastructure, and Financial Capital. Internal and external Suppliers of IT Components provide the IT Service Provider with Applications, Data, Infrastructure and Environment, which the IT Service Provider 'assembles' into IT services.

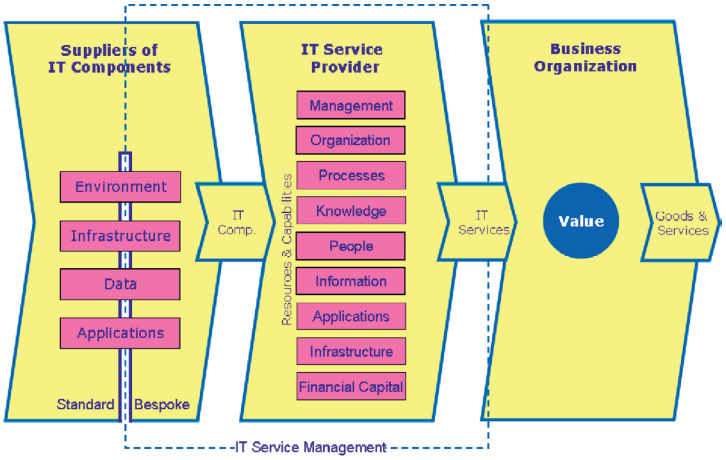


Figure 2: The IT Service Chain

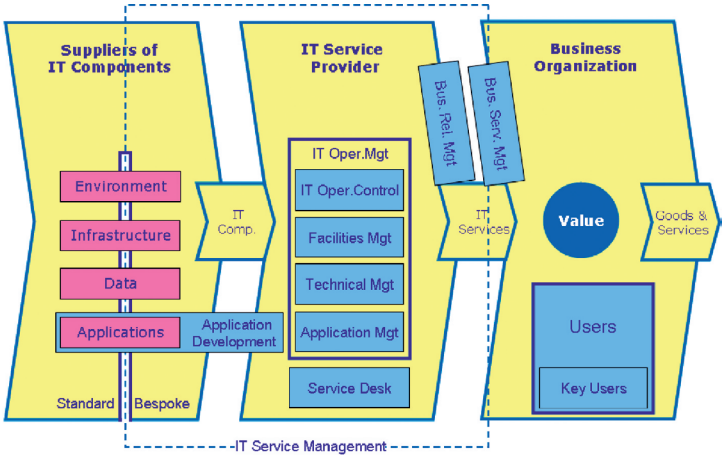


Figure 3: Organizational functions

The scope of IT Service Management according to ITIL extends partially into the domain of the suppliers of IT components. The manufacturing of standard products such as laptops, servers, operating systems, tooling and generic packaged applications is excluded from IT Service Management but the production of products made to order is (partly) included. This generally applies more often to applications than to infrastructural components. In the case of packaged applications that have to be extensively customized in order to be used effectively, the production of the standard application is excluded but any customization is included.

ITIL has defined a number of organizational functions that carry out processes and activities. A number of these have been added to figure 2 to produce figure 3. The functions that are most relevant to this publication are Application Management and Application Development. In ITIL terms, the Application Management Lifecycle is found in all areas of the Service Lifecycle.

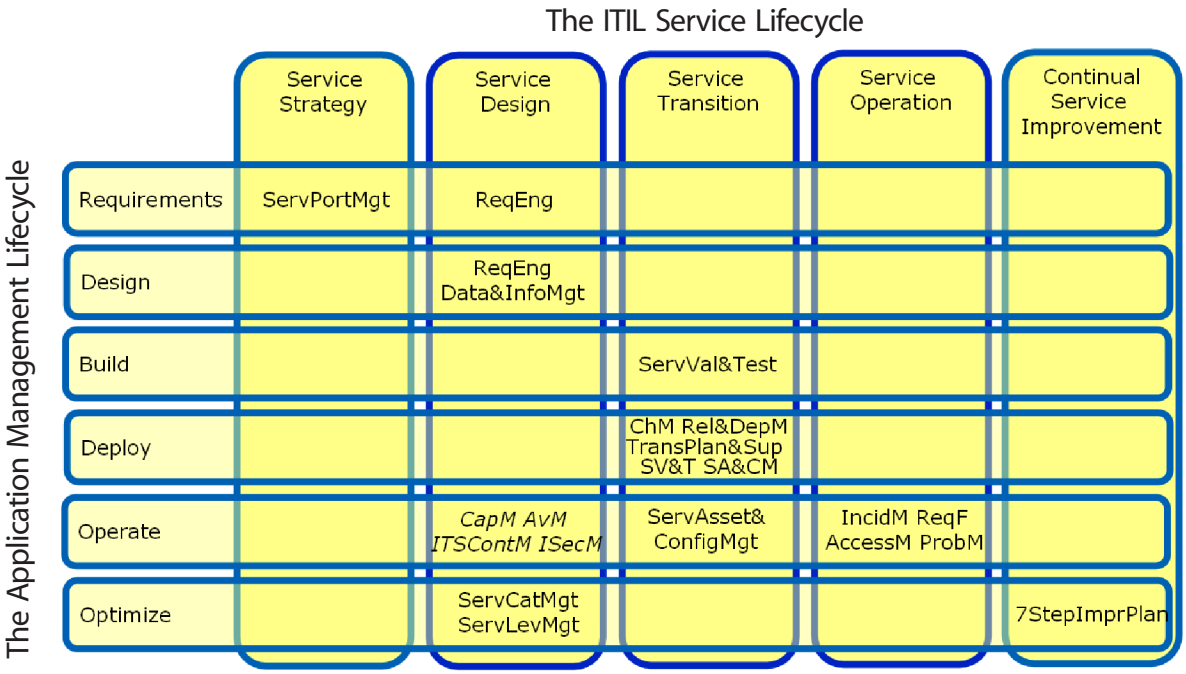


Figure 4: The Application Management Lifecycle and the Service Lifecycle

It is important to realize that the actual maintenance and enhancement (technical design, coding etc) of applications is performed by Application Development, which is a part of the Service Design Process. The testing and validation of the application is executed at the Service Transition stage of the lifecycle and the ongoing operational management of the application occurs in the Service Operation stage of the lifecycle. Application Management is involved in specifying and acceptance from an Application Management Lifecycle perspective. A quote from the Service Operation volume illustrates this: "Application Management is responsible for managing applications throughout their lifecycle. The Application Management function is performed by any department, group or team involved in managing and supporting operational applications. Application Management also plays an important role in the design, testing and improvement of applications that form part of IT services. As such, it may be involved in development projects, but is not usually the same as the Applications Development teams."

Figure 5 shows the relative effort of Application Management and Application Development when plotted on the Application Management Lifecycle.

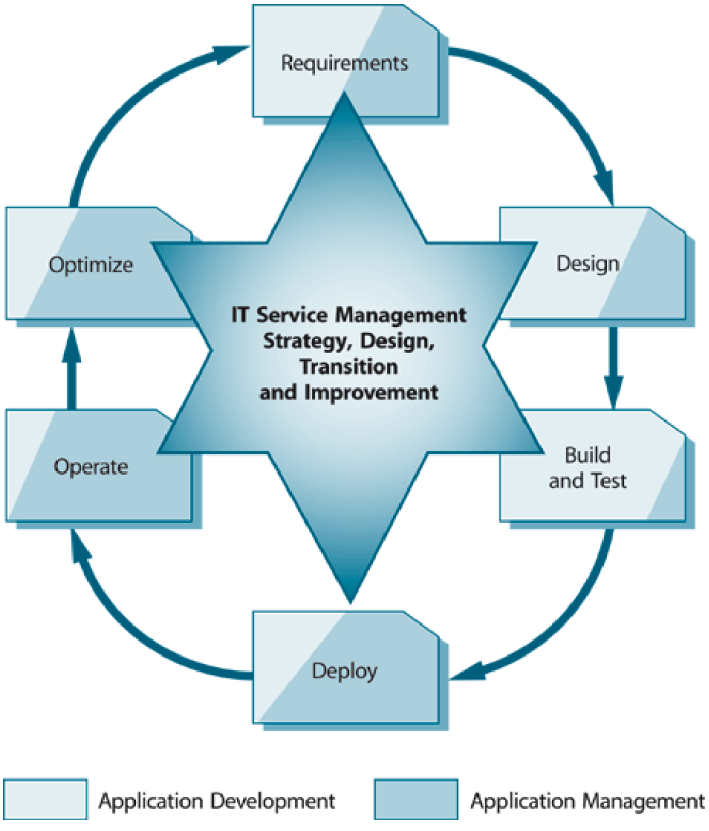


Figure 5: Role of teams (Application Management and Application Development) in the Application Management Lifecycle

Application Management Lifecycle (ITIL)

- In the **Requirements** phase the requirements for a new application are gathered, based on the business needs of the organization. This phase is active primarily during the Service Design phase of the ITSM Lifecycle.
- **Design** is the phase during which requirements are translated into specifications for the IT-components that are required. Design includes the design of the application itself or of any customization to standard packaged software and the design of the environment, or operational model that the application has to run on. Architectural considerations are the most important aspect of this phase, since they can impact on the structure and content of both application and operational model.
- In the **Build** phase, both the application and the operational model are made ready for deployment. Application components are coded or acquired, integrated and tested. For purchased software, this will involve the actual purchase of the application, any required middleware and the related hardware and networking equipment. Any customization that is required will need to be done here, as will the creation of tables, categories, etc. that will be used. This is often done as a pilot implementation by the relevant Application Management team or department.
- In **Deploy**, both the operational model and the application are deployed. The operational model is incorporated in the existing IT environment and the application is installed on top of the operational model, using the Release and Deployment Management process described in the ITIL Service Transition publication. Testing also takes place during this phase, although here the emphasis is on ensuring that the deployment process and mechanisms work effectively, e.g. testing whether the application still functions to specification after it has been downloaded and installed. This is known as Early Life Support and covers a pre-defined guarantee period that testing, validation and monitoring of a new application or service during that period occurs. Early Life Support is covered in detail in the Service Transition publication.
- In the **Operate** phase, the IT services organization operates the application as part of delivering a service required by the business. The performance of the application in relation to the overall service is measured continually against the Service Levels and key business drivers. It is important to distinguish that applications themselves do not equate to a service. It is common in many organizations to refer to applications as 'services'; however, applications are but one component of many needed to provide a business service.
- In **Optimize**, the results of the Service Level performance measurements are measured, analyzed and acted upon. Possible improvements are discussed and developments initiated if necessary. The two main strategies in this phase are to maintain and/or improve the Service Levels and to lower cost. This could lead to iteration in the lifecycle or to justified retirement of an application.

  Most of the guidance on Application Management and Development is covered in the Service Design and Service Operation volumes.

ASL

The Application Services Library comprises:

- A process framework for Application Management
- A dynamic collection of best practices that industry partners have contributed
- A maturity model, with a description of five maturity levels for each process
- An organization that offers support (publication, education, consultancy, certification) to those who wish to professionalize their Application Management.

ASL offers guidance for the Application Management domain, which is scoped more broadly then the ITIL definition: "The contracted responsibility for the management and execution of all activities related to the maintenance and evolution of existing applications, within well-defined service levels." In other words: economically sound operational management, maintenance, enhancement and renovation of applications.

The reader should note that ASL and ITIL use Application Management and Application Development in different ways: ASL positions Maintenance (including enhancement and renovation) within the scope of Application Management and defines Application Development as the function that produces new applications, not releases of existing applications (see figure 6). Because Application Management and Application Development are both homonyms – one word with more than one meaning – (ASL) and (ITIL) are used in the rest of this publication to denote which meaning should apply.

ASL sees advantages in clustering Operational Management of applications with Application Maintenance while ITIL prefers to separate them and cluster Application Maintenance with development of new applications.

	ITIL	ASL
Developing new applications	Application Development	Application Development
Maintaining existing applications	Application Development	Application Management
Operational management of applications	Application Management	Application Management

Figure 6: Differing definitions

ASL emphasizes that business processes should be supported by information systems during the lifecycle of the business processes. This entails managing and maintaining the software, databases and documentation. It includes impact analysis, design build and testing. Also included are processes that ensure optimum availability, performance and continuity of the applications with a minimum of disruption of the business activities. Great importance is placed on policy making that is in line with the business (information) policies, in order to ensure long term alignment with the business.

ASL is positioned according to the IT management model of Professor Maarten Looijen (Delft University, the Netherlands), who distinguishes three forms of IT Management: Business Information Management, Application Management {ASL} and Infrastructure Management. Business Information Management and Infrastructure Management are defined as follows:

- Business Information Management deals with actively managing, maintaining and supporting the functionality of information systems. Business Information Management represents the user organization that benefits from the functionality and is the owner of the information system and responsible for the entire information provisioning of the organization
- Infrastructure Management is responsible for the operational aspects of the information system, comprising hardware, software and databases. In essence it is the organization that runs the information systems and maintains the infrastructure. This will often be a data centre and a desktop management organization.

The way this terminology differs from ITIL is illustrated in figure 7 in which the scope of IT Service Management {ITIL} is plotted on the way ASL describes the world.

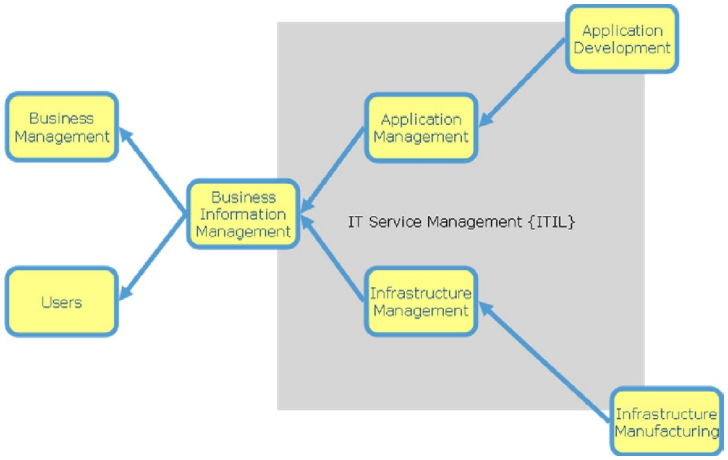


Figure 7: Scope of IT Service Management compared to ASL terminology

ASL Framework

The framework consists of six clusters of processes, divided into three levels: the Operational and Management processes have a short to medium term perspective whereas the Strategic processes look towards a horizon a couple of years ahead.

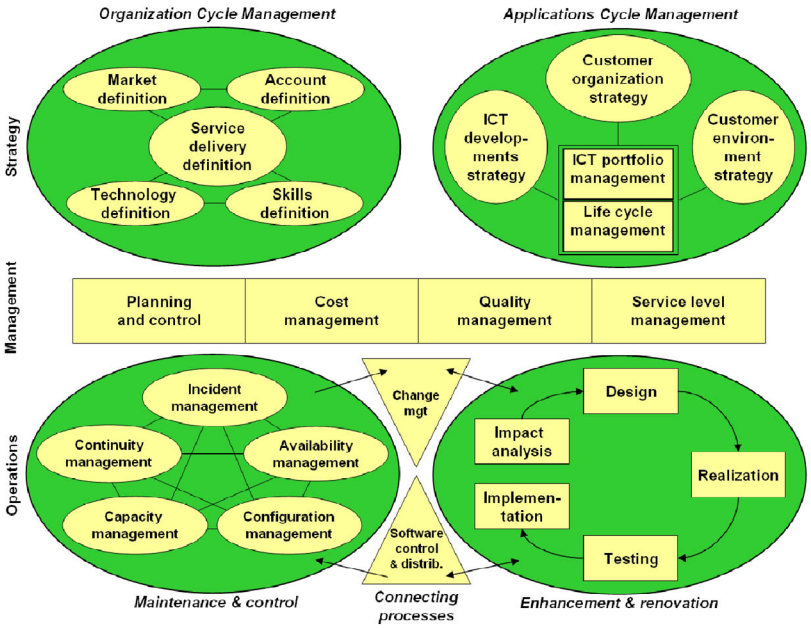


Figure 8: The ASL Process Framework

Operational Management ensures that the current applications are used in the most effective way to support the business processes, using a minimum of resources, and leading to a minimum of operational interruptions. The primary objective is to support keeping the applications up-and-running. The five processes are similar to ITIL processes with the same names and with similar objectives but different content, due to the different nature of Application Management {ASL}.

Enhancement & Renovation ensures that the applications are modified in line with the changing requirements, usually as a result of changes in the business processes, keeping the applications up-to-date. This is where the modifications to the software, data models and documentation are made. These processes are similar to activities performed during the initial development of applications but there are some fundamental differences between the initial development of applications and enhancement & renovation later on in the lifecycle. Unlike development, maintenance and enhancement are affected by a number of complications:

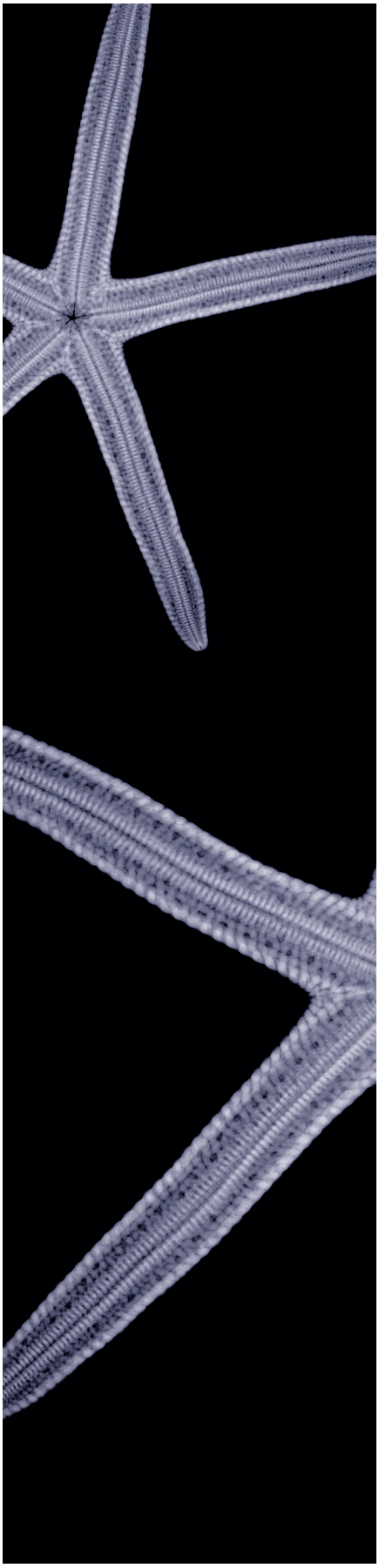
- Heavier demands: a new release often has to be introduced at a set date in order to cope with changed legislation or because new products have to be introduced.
- Shorter feedback cycle: the designer and programmer will be quickly confronted with shoddy work, which will have to be tackled promptly.
- Fewer options for improvement: due to the restrictions imposed by choices made several years before; changes have to be made within the existing structure and the ideal solution often has to be sacrificed for a creative compromise.

Operational Management and Enhancement & Renovation are closely related as they deal with the same application objects. The two Connecting processes deal with transferring software and data enhancement to maintenance in a controlled manner.

The **Management processes** ensure that all of the operational process clusters are integrally managed. Attention is paid to managing human resources, deadlines, revenue and costs, internal and external quality (service levels).

Applications Cycle Management deals with business and IT alignment, developing a long-term strategy for the information systems, in line with the long-term strategies of the (business) organization. It is approached from two perspectives: that of the individual applications but also from the application portfolio, looking at all the applications in relation to each other. ACM looks mainly at business issues – developments in both the sector in which the organization operates as the organization itself – so it has to be done together with business information management. The main task that Application Management {ASL} has is to get these issues addressed.

Organization Cycle Management looks at the long-term organizational development of the unit, whether this is an internal department or a commercial organization. Application Management {ASL} departments are often notoriously conservative and this is a stimulus to get them thinking about the kind of Application Management {ASL} services they want to provide. The services demanded by the users become so broad that it is difficult for both internal and external Application Management {ASL} organizations to provide the full range. This forces a decision about the services that should be provided by the Application Management {ASL} organization itself and those where a partnership might be appropriate. OCM stimulates that the Application Management {ASL} department or company considers not only its customer's future needs but also its own future.



ITIL and ASL

As mentioned earlier, ASL addresses both Application Management {ITIL} and Application Development {ITIL} as defined by ITIL, restricting Development to maintenance of existing applications.

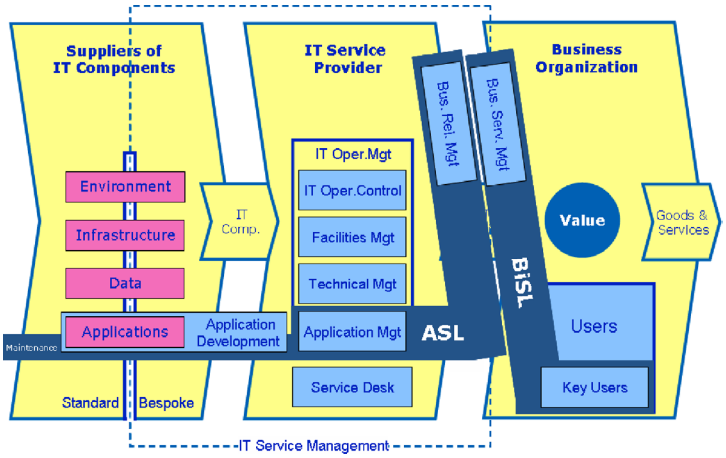


Figure 9: ASL and BiSL* plotted on the ITIL functions

* The Business Information Services Library is a public domain framework that describes the primary processes of a business information management function at the strategy, management and operations level. The relationship of BiSL with ITIL is the subject of a future white paper.

In order to better understand the similarities and differences in ITIL and ASL, ITIL and ASL processes are analyzed and mapped to each other. The phases of the Application Management Lifecycle are used to structure this analysis.

Requirements

ITIL	ASL
Service Portfolio Management	Applications Cycle Management Cluster
Requirements Engineering	Quality Management
	Impact Analysis
	Design

On a strategic level, the ACM processes in ASL evaluate the long-term alignment of the application portfolio with the business processes. These provide high-level requirements and therefore have a strong relationship with ITIL's Service Portfolio Management.

In ASL, the focus is on realizing the functionality that is specified by the Business Information Management domain and described in change requests. While ASL recognizes the importance of producing an application that also complies with non-functional requirements such as performance, throughput, disaster recovery capabilities and security, ITIL gives more detailed guidance on this aspect. This can be found in Requirements Engineering and other processes.

Design

ITIL	ASL
Requirements Engineering	Design
Data and Information Management	

ITIL's Service Design covers this phase in detail, with an accent on overall requirements and how an application should fit within the infrastructure. Relevant topics are Requirements Engineering and Data and Information Management.

In ASL, the goal of Design is to produce a functional design of a new release, which more technically oriented people can translate into a technical design. Functional design, data model and test specifications are the ASL deliverables.

Build

ITIL	ASL
Service Validation	Realization
and Testing	Testing
	Implementation

ASL's Realization process comprises technical design, programming and the initial unit test of the new or changed application component. The Testing process tests the additions and changes to the application in a broader context, including performance testing. In Implementation the acceptance test is carried out.

The content of the ASL processes Realization and Testing are hardly tackled by ITIL, although Service Validation & Testing in Service Transition describe various other kinds of tests. These tests are partly covered by the ASL process Implementation.

Deploy

ITIL	ASL
Change Management	Testing
Release & Deployment Management	Implementation
Transition Planning and Support	Software Control & Distribution
Service Validation and Testing	Configuration Management
Service Asset and Configuration Management	

ITIL's Service Transition describes processes and gives guidance for the implementation of new IT services. The processes are Change Management, Release & Deployment Management and Transition Planning and Support. They cover the integration of IT components such as applications into the IT services: testing and other activities related to the transition to the operational phase. This is clearly related to the ASL Implementation process.

Close interaction occurs between the ASL processes of Change Management and Software Control and Distribution. If Software Control and Distribution is properly structured, it actually constitutes a 'technical' variant of Change Management. The transition from a release to a subsequent stage is also visible within Software Control and Distribution. Software Control and Distribution controls the physical relocation of software patents from development to testing to approval and then to production. ITIL's Release & Deployment Management focuses mainly on ensuring that not only the software is ready when production is to commence, but also the requisite hardware and any non-technical activities. In addition to the actual commencement of production, Release & Deployment Management also includes activities involving planning, design, construction, testing and implementation. As such, it appears to be similar to the maintenance and upgrade realm of ASL, although the emphasis lies elsewhere. This is because ITIL briefly deals with those activities that need to be performed in order to actually modify the software. Any modified software for which ASL has defined the Maintenance and Enhancement processes, is approved within the DSL and is consequently included in the relevant release. ITIL places the emphasis on the roll-out. A great deal of attention is devoted to the manner in which efforts are made to ensure that the correct version of any software is distributed to the appropriate clients and desktops. ASL's process of Software Control and Distribution deals with the physical makeup of a release, ensuring that the appropriate versions are placed in the DTAP environments (DTAP – Development, Testing, Acceptance and Production) and hence also the roll-out of the software. Compared to ITIL, ASL only provides a summary indication of all of the activities and points requiring attention which are involved in the roll-out of any new software release.

Whereas Change Management (ITIL) addresses all kinds of changes, ASL restricts the scope of Change Management to changes in the functionality of the applications. For instance: running an extra production job is an ITIL change but not an ASL change.

Operate

ITIL	ASL
Incident Management	Incident Management
Request Fulfilment	Availability Management
Event Management	Capacity Management
Access Management	Continuity Management
Problem Management	Configuration Management
Service Asset and Configuration Management	
Technical Management activities within: Capacity Management Availability Management IT Service Continuity Management Information Security Management	

The new version of ITIL introduces more processes that correspond to the five ASL processes in this cluster. The scope of the ITIL process Incident Management has been reduced to handling disturbances and failures. Triggers from hardware and logging-software are processed by Event Management. Questions and Standard Changes, which are given to the Service Desk function, are dealt with by Request Fulfilment and not Change Management or Incident Management, as was previously the case. Request Fulfilment also processes various other kinds of Service Requests. Incident Management in ASL deals with all these kinds of Service Calls (ASL).

The tactical part of Capacity Management is now called Demand Management and can be found in Service Strategy. This process doesn't address the complete needs of the business organization but focuses on the capacity aspects. 'Demand Management' is therefore a potentially confusing term because it is often associated with managing IT from a business point of view and by somebody representing the business. Capacity Management according to ASL covers both the tactical and operational aspects of ensuring that there is enough capacity to allow the users to work with applications in accordance with the service levels that have been agreed.

ITIL's IT Service Continuity Management, Information Security Management and Access Management (authorizations etc) are clustered in ASL's Continuity Management but are less comprehensively covered.

Availability Management within ITIL remains comparable to Availability Management within ASL although ASL focuses on the availability of the applications and refers to the interdependence with Infrastructure Management (and implicitly to ITIL) for availability of the infrastructure.

Configuration Management (ITIL) has been extended to Service Asset and Configuration Management. It still contains elements of Version Management (part of ASL's Software Control and Distribution) and therefore has a relationship with this ASL process and with ASL's own Configuration Management.

The ITIL processes are described in depth and often only in generic terms, allowing the guidance to be applied to both infrastructure and application services. In comparison to ASL, ITIL therefore offers added value for the Application Management (ASL) domain.

Optimize

ITIL	ASL
Service Level Management	Quality Management
Service Catalogue Management	Service Level Management
The 7-Step Improvement Process	Applications Cycle Management

ASL uses the term 'problem' to denote (potential) deficiences in applications, tools, processes and skills. These problems are analysed and acted on by Quality Management. ASL's Service Level Management is generally a source of tactical improvements. As mentioned under Requirements, the ACM processes in ASL evaluate the long-term alignment of the application portfolio with the business processes. These provide high-level requirements and therefore have a strong relationship with ITIL's Service Portfolio Management.

ITIL's Continual Service Improvement measures the quality and relevance of applications in operation and provides recommendations on how to improve applications if there is a clear return on Investment for doing so.

Additional analysis

ASL also deals with some topics that are not directly related to stages of the Application Management Lifecycle. These are described below.

Strategic processes
Most of ASL's Organization Cycle Management activities can be found in Service Strategy where the Service Portfolio of the IT Service Provider is described. The Service Portfolio contains services that are currently provided (Service Catalogue), services in development (Pipeline) and services that are no longer provided (Retired Services). In addition to this, Continual Service Improvement describes how strategic improvements can be achieved by periodical meetings with the customer about future developments in the business organization and environment, resulting in capturing the consequences for the IT Services. This looks a lot like ASL's Applications Cycle Management. ASL describes these strategic areas in ten discrete processes which provide concrete guidance as to how to create and maintain a Service Catalogue within the context of a business plan for the Applications Management (ASL) organization.

Management processes
Financial Management (ITIL) extends its scope beyond the IT domain into the Business (Information Management) domain and therefore has a relation with Cost Management (ASL) and Financial Management (BiSL).

ITIL now has more processes about services than only Service Level Management. Newcomers are Service Catalogue Management (managing the services that a particular customer can buy; this is part of Service Level Management in ASL) and Supplier Management (ensuring that suppliers perform adequately; this is a shortcoming in ASL).

ITIL doesn't have separate processes for Quality Management (ASL) and Planning & Control (ASL) but Continual Service Improvement gives more than enough guidance for ensuring long-term customer satisfaction and therefore has an important relationship with ASL's Quality Management.

Appendix: Mapping ITIL V3 to ASL

ASL Clusters & Processes	Operational Management	Connecting Processes	Enhancement & Renovation	Management	Applications Cycle Management	Organization Cycle Management
	• Incident Management • Availability Management • Capacity Management • Continuity Management • Configuration Management	• Change Management • Software Control & Distribution	• Impact Analysis • Design • Realization • Testing • Implementation	• Planning & Control • Cost Management • Quality Management • Service Level Management	• Customer organization strategy • Customer environment strategy • ICT developments strategy • ICT portfolio management • Life cycle management	• Account Definition • Market Definition • Technology Definition • Skills Definition • Service Delivery Definition
ITIL Phase						
Service Strategy	• Demand Management			• Financial Management	• Service Portfolio Management • Financial Management	• Service Portfolio Management • Financial Management
Service Design	• Availability Management • Capacity Management • Information Security Management • IT Service Continuity Management			• Service Level Management • Service Catalogue Management • Supplier Management		• Supplier Management
Service Transition	• Service Asset and Configuration Management • Knowledge Management	• Change Management • Transition Planning and Support • Release and Deployment Management • Service Asset and Configuration Management • Knowledge Management	• Transition Planning and Support • Release and Deployment Management • Service Validation and Testing • Knowledge Management	• Knowledge Management • Evaluation		
Service Operation	• Incident Management • Request Fulfilment • Event Management • Access Management • Problem Management			• Problem Management		
Continual Service Improvement	• Service Measurement	• Service Measurement	• Service Measurement	• The 7-Step Improvement Process • Service Reporting • Service Measurement	• The 7-Step Improvement Process	• The 7-Step Improvement Process

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