

White Paper

Enterprise Architecture and ITIL: Implementing Service Design

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In the previous paper “Enterprise Architecture and ITIL®¹: Implementing Service Strategy” we looked at some of the more important concepts in Service Strategy:

- How to define Services
- The concept of Market Spaces
- The concept of Value Chains.

Then we looked at a brief summary of each of the ITIL Service Strategy processes² and concluded with a small example applied to an EA³ department to illustrate the principles.

In summary, Service Strategy:

- Identifies and defines any new IT services to be developed and by when;
- Identifies which existing IT Services are to be upgraded and by when.

It also highlights:

- Which new processes in the Service Management System will be introduced (on a formal basis) and by when;
- Which existing processes will be upgraded and again, by when⁴.

At this point, Service Design takes over to design the new IT Services and also the changes required to existing IT Services.

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In this paper on Service Design, we will:

- Review (briefly) some important principles used in ITIL in the design of IT Services.
- Summarize the main ITIL processes for managing Service Design.
- Then show how these principles would be applied to designing one of the Services identified in the Service Strategy.

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¹ ITIL® and IT Infrastructure Library® are Registered Trade Marks of the Cabinet Office of the Government of the United Kingdom.

² Please note, a list of the ITIL processes by each stage of the ITIL Service Lifecycle is given in Appendix A.

³ Please note, a list of the acronyms used in this paper and their meaning is given in Appendix B.

⁴ Please note that in this set of white papers, the focus is on the management of IT Services. Hence we will not be discussing the introduction of the ITIL processes. However, anyone wishing to do so is welcome to contact me through Orbus Software.

Service Design Highlights

The comments in this section are restricted mostly to the content of the introductory ITIL book “Introduction to the ITIL® Service Lifecycle: 2011 edition”⁵. The main Service Design book “ITIL® Service Design, 2011 edition”⁶ is a much more substantial book.

The main objective of Service Design (SD) is to try to design IT Services effectively, first time, so that only minimal improvements are required during the service’s lifetime. Of course this is an ideal and subsequent business changes will almost certainly require changes to many IT Services. As a result this objective does not eliminate the need for Continual Service Improvement efforts.

Service Design introduces two key concepts; the Service Design Package (SDP) and an appropriate Service Design Model. The SDP builds on the Service Requirements identified in the definition of the Service in Service Strategy. It specifies the Service Requirements in more detail (down to Service component level) and defines how these will be fulfilled from a technical and organizational perspective. Service Design Models are a very useful way of accelerating the process of IT Service design (and to produce a SDP).

Service Design also covers a number of key methods and practices that help to achieve good quality IT Service design, especially five important “aspects of design”.

The main Service design processes addressed are the following:

- Design Coordination
- Service Catalogue Management
- Service Level Management
- Availability Management
- IT Service Continuity Management
- Information Security Management
- Supplier Management.

Note that, although they are predominantly used in the area of Service Design, many of these processes are used in other stages of the Service Lifecycle.

Lastly, the importance of the Service Design stage in the life of an IT Service cannot be emphasized enough. If service design is done well, the benefits are substantial:

- Improved Quality of Service; greater alignment with customer needs and better service performance from the customer’s and service provider’s perspectives

⁵ Published by “The Stationery Office”, ISBN 9780113313099. It is widely available, including from several on-line websites.

⁶ Published by “The Stationery Office”, ISBN 9780113313051.

- Lower “Total Cost of Ownership” especially lower direct operating costs and maintenance and support costs.
- Improved IT Governance; especially from a better understanding of the business context and the components of IT risk imbedded in IT Services.

Key Service Design Principles

ITIL highlights a number of key components that enable comprehensive IT Service Design as illustrated in *Figure 1*. In the diagram, the output from Service Strategy was discussed in the previous paper. This paper will now focus on the remaining components:

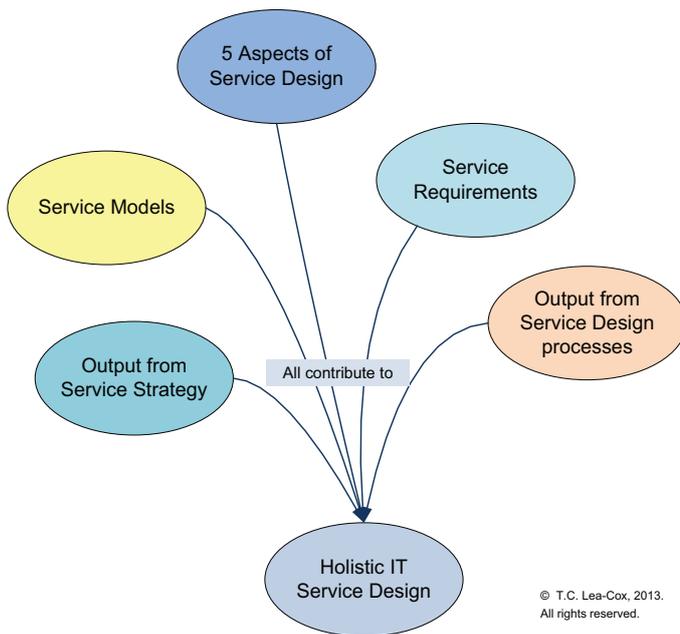


Figure 1: Important Contributions to Comprehensive IT Service Solution

Five key Aspects of Service Design

ITIL Service Design advocates a holistic approach that integrates the following five key aspects of service design:

1. Design solutions for a new or changed IT Service using an appropriate Service Design Model, or framework. (These models are discussed further below).
2. Ensure the organization’s Management Information Systems and other tools are capable of supporting the new or changed IT Service.
3. Ensure all business and technology architectures are consistent with the new or changed IT Service and that the resulting infrastructure will be able to operate and maintain the service.
4. Ensure the processes, roles, responsibilities and skills have been specified, together with any “gaps” that need to be filled for the new or changed IT Service.
5. Ensure that new measurement methods and metrics required for the new or changed IT Service have been identified together with any enhancements to the current set.

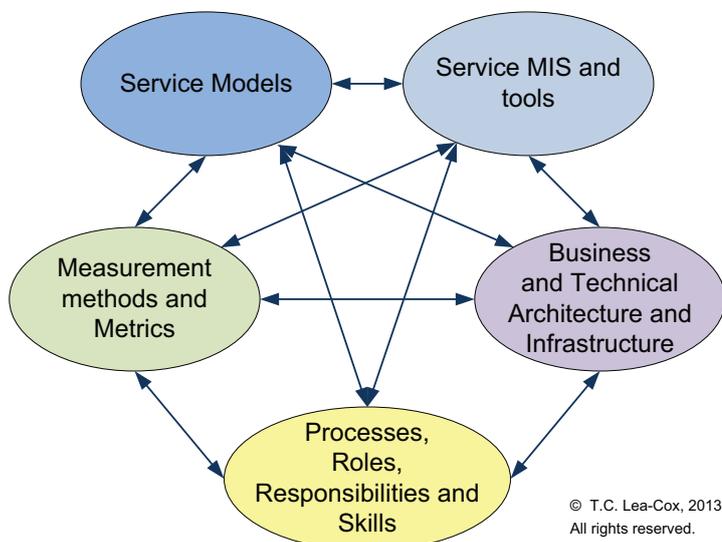


Figure 2: The Five Key Aspects of Service Design

These five aspects of design implicitly account for another common framework, the “Four Ps of Design”:

- People
- Processes
- Products (Services, Technology and Tools)
- Partners (Suppliers).

Service Requirements

The holistic approach needs to extend to defining IT Service requirements, especially to account for:

- Customer requirements
- Other stakeholder requirements
- The requirements derived from understanding the components of the service and their inter-relationships.

Service Design Models

A Service Design Model⁷ is a pre-prepared set of templates or framework for a specific type of service, used to expedite the design of a new service⁸. In other words, in practice it usually consists of a set of relevant models. Service Design Models are useful because they frequently aid significant re-use of common service components, for example, payment options for purchases made.

The actual design is normally strongly influenced by the Service Delivery Model selected.

Service Delivery Models

In attempting to fill the capability gaps for a new or changed IT Service, a service provider should not and does not necessarily need to bridge the gaps on its own. Usually one or more Service Delivery Models (or strategies) can be used to deliver a service and its components. More specifically, there are often opportunities for a service or its components to be insourced, outsourced, co-sourced or even multi-sourced – and this is not an exhaustive list! This applies especially to the provision of a Service Delivery infrastructure. For example:

- System hosting is now often outsourced or purchased on a SAAS basis.
- Payments by credit card or PayPal are usually outsourced because of the need to comply with stringent data protection regulation.

Service Design Package (SDP)

The SDP essentially provides all the plans (“blueprints”) for the Service Transition and Service Operations stages of a new IT Service or for an existing service that needs to be changed. In ITIL this is a very

⁷ A Service Design Model is simply part of the Service Models concept introduced in Service Strategy under “How to define IT Services”.

⁸ A useful diagram summarizing the composition of an IT Service and then an explanation of the components is given on page 71 of the book, “Introduction to the ITIL® Service Lifecycle: 2011 edition”.

comprehensive document. In practice, the depth and breadth of the content will most likely depend on:

- The nature of the IT Service and its complexity
- The development method used (especially agile vs. waterfall).

To produce a SDP we build on the basic service definition for the IT Service developed in Service Strategy and, as the IT Service is analyzed and designed using the Service Design principles and processes, we add more views and components to the SDP.

ITIL Processes for managing Service Design⁹

Design Coordination

Key Objective of the Process:

To coordinate all Service Design activities, processes and resources.

Design Coordination ensures the consistent and effective design of new or changed IT Services and their components; for example, the Service MIS, architectures, technology, processes, information and metrics.

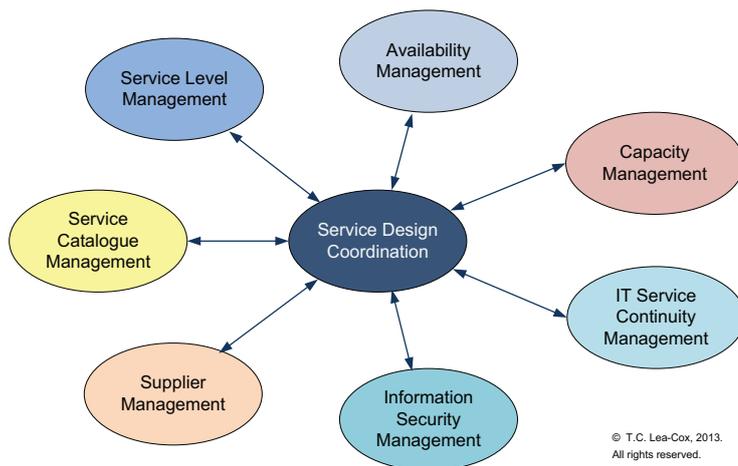


Figure 3: Design Coordination controls and coordinates the activities of the other Service Design processes

Additional Notes¹⁰:

Design Coordination provides a single point for the communications and control of all Service Design activities as shown in *Figure 3*.

Overall Approach:

- Provide design coordination management support and direction
- Plan Service Design activities
- Monitor and coordinate Service Design activities
- Review and approve the Service Design Package and submit a Request for Change (RFC) to Change Management.

⁹ A significant additional source of information for this section is the “IT Process Maps GbR”, including the set of ITIL process maps provided by Orbus Software.

¹⁰ The following is not stated in the ITIL books – hence the footnote. ITIL does not cover Project Management. However, there are two processes in particular that overlap very significantly with those of Project Management:

- Service Design Coordination (in Service Design)
- Transition Planning and Support (in Service Transition).

If there is an established Project Management methodology in your organization, then these processes would probably fit more naturally in Project Management.

Service Catalogue Management

Key Objective of the Process:

To ensure a Service Catalogue is produced and maintained and that the relevant details are published to service stakeholders.

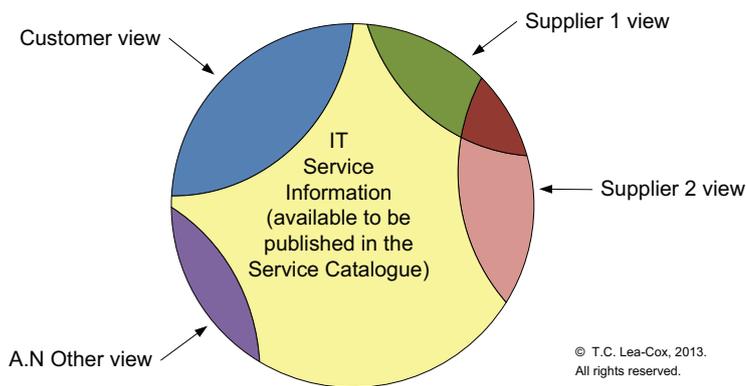


Figure 4: There may be more than one view of the IT Service details in the Service Catalogue to provide the information required by different stakeholders in the IT Service.

Additional Notes:

The Service Catalogue provides a central, consistent view of IT Services and their details, especially for customers. It is likely to contain more than one view of an IT Service if there are stakeholders that have different information requirements. It is also useful to show the hierarchy of IT Services where this exists.

Overall Approach:

- Set up the Service Catalogue (including the ability to publish its contents)
- For each new, changed or decommissioned IT Service, update the Service Catalogue as required (through Change Management).

Service Level Management

Key Objective of the Process:

To negotiate Service Level Agreements (SLAs) with customers and to ensure IT Services are designed and maintained to meet the agreed Service Levels. Also to ensure that all (internal) Operating Level Agreements and (third party) Underpinning Contracts are synchronized with and support the SLAs.

Additional Notes:

A key focus of Service Level Management (SLM) is to negotiate service agreements that are acceptable to all the parties involved. SLM will also set up and maintain an appropriate structure of (standard) SLAs for the service provider and its customers, normally one or a combination of:

- Service-type based SLAs
- Customer-type based SLAs
- Multi-level SLAs.

This allows SLAs to be standardized and kept consistent with each other more easily.

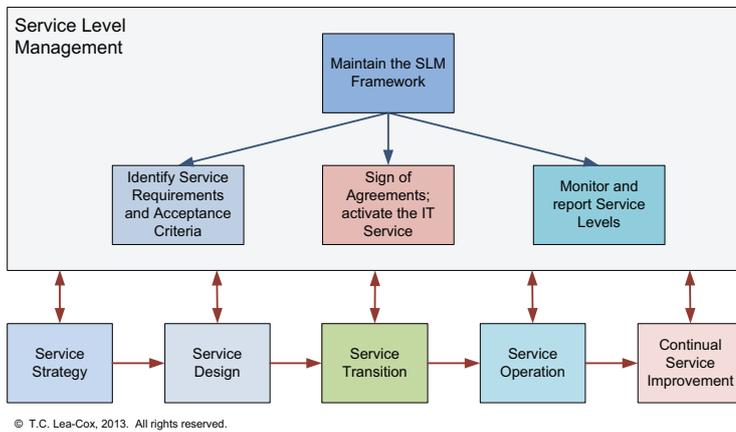


Figure 5: Service Level Management works across the entire Service Lifecycle

Overall Approach:

- Maintain a Service Level Management framework.
- Identify customer Service Requirements and Acceptance Criteria
- Sign off the Agreement and activate the IT Service(s)
- Monitor and report actual service levels.

Note: In summary, SLM provides key information for many other Service Management processes (especially during Service Design) and then ensures that service levels are maintained.

Availability Management

Key Objective of the Process:

To define, analyze, plan, measure and improve all aspects of the availability of IT Services.

Note that implicit in this is to ensure that the IT infrastructure and capabilities established can meet the agreed availability targets.

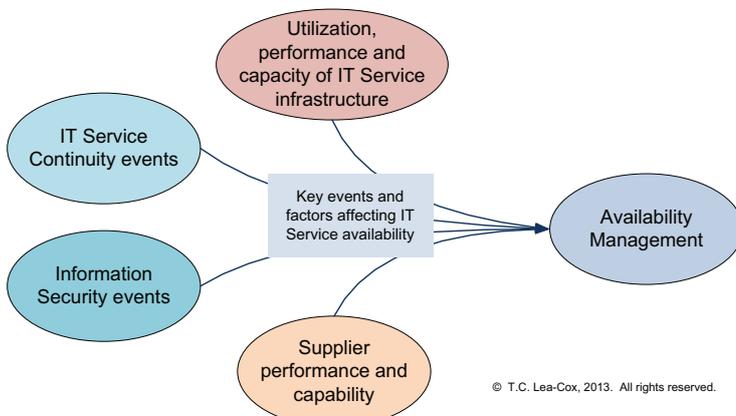


Figure 6: IT Service availability is affected by events and factors from several sources. The most important are addressed by other Service Design processes.

Additional Notes:

Measuring and monitoring IT Service availability is the key to ensuring that service level targets are met consistently. But Availability Management needs to focus on the current and future IT Service availability needs of the business which implies that there is a reactive and proactive component to Availability Management. As a result, it also focuses on continually optimizing and improving the availability of IT Services and the supporting IT infrastructure for the benefit of customers.

Overall Approach:

- Plan and design (upgrade) IT Services to meet current and new availability requirement
- Perform availability testing
- Monitor and report actual service availability and suggest improvements.

Capacity Management

Key Objective of the Process:

To ensure that the capacity of IT Services and the supporting IT Infrastructure is sufficient to deliver the agreed service levels to customers.

Additional Notes:

Capacity Management is important because it balances:

- Cost against resources required
- Supply against demand.

The main output is the Capacity Plan which shows the current and future resourcing needs of the business required to meet the service levels agreed in the customer SLAs. Note that this has to account for the utilization and performance levels of these resources and the other components of IT Services.

Overall Approach:

- From the business needs and plans for IT Services, identify the service capacity and performance requirements.
- Monitor IT Service performance and forecast the size and timing of changes in service capacity required.
- Monitor the performance of the supporting IT Infrastructure and forecast the size and timing of changes in component capacity required.
- Report the capacity, utilization and performance of IT Services and the supporting IT Infrastructure.

IT Service Continuity Management

Key Objective of the Process:

To support the objectives of Business Continuity Management. Also to manage the risks that could seriously impact IT Services and to ensure that the IT service provider can always provide agreed minimum service levels.

Additional Notes:

Even the best managed services are subject to major unplanned and disruptive events outside the service provider's control. How the service provider responds to such events and more importantly how prepared they are for such events is what makes the difference between catastrophic failure and successful recovery.

IT Service Continuity Management (ITSCM) focuses on managing availability risk by assessing the threats and vulnerabilities to the organization's "vital business functions" and then by ensuring preventative mechanisms and recovery plans are in place. The recovery of IT Services after a major disruptive event is managed through

the Incident Management processes, especially “Handling of Major Incidents”.

Overall Approach:

- Provide ITSCM support and direction
- Design IT Services (mechanisms and procedures) to meet business continuity objectives
- Provide ITSCM training and perform regular testing
- Perform regular ITSCM reviews.

Information Security Management

Key Objective of the Process:

To ensure the confidentiality, integrity and availability of an organization’s data, information and IT Services.

Additional Notes:

Protecting personal information and an organization’s intellectual capital is becoming increasingly complex and regulated. Information security activities should be governed by an approved (by top management) Information Security Policy supported by a set of more specific policies usually based on the information security requirements of specific types of assets and resources.

ISO/IEC 27001 is the formal Information Security standard. It focuses on establishing an Information Security Management System for an organization which can then be independently certified.

Information Security Management focuses on identifying information security threats and vulnerabilities and establishing appropriate counter-measures. Recovery from information security incidents are managed through Incident Management.

Overall Approach:

- Provide Information Security Management support and direction
- Design, implement and maintain information security controls (an Information Security Management System)
- Provide information security training and perform regular testing
- Perform regular information security reviews.

Supplier Management

Key Objective of the Process:

To ensure that all contracts with suppliers support the needs of the business and that all suppliers meet their contractual commitments.

Additional Notes:

Strong and trusted relationships with suppliers are a crucial component of successful Service Management. As a result it is important to:

- Manage supplier relationships
- Manage supplier performance
- Ensure all supplier contracts are aligned with the organization's business needs and support committed customer SLAs.

When suppliers are appointed, it is sometimes important that their capabilities complement those of the organization from several other perspectives, e.g. ethical standards applied.

Overall Approach:

- Establish and maintain a Supplier Management Framework
- Evaluate and select new suppliers
- Agree and sign new supplier contracts and build new relationships.
- Monitor supplier performance, review and adjust contracts as required and manage the supplier relationship.
- At the appropriate time, renew or terminate the contract.

Applying Service Design principles to a small EA department

Enterprise Architecture Publishing Service (EA Publishing Service)

For the purposes of this example we will apply the Service Design principles and processes to the “EA Publishing Service” (called the “Current Architecture Publishing Service” in the Service Strategy example).

ITIL Service Design Approach:

It is likely that Service Design for a new IT Service will start with Service Design Planning in the Service Design Coordination process.

For an existing IT Service that needs to be modified, the start of Service Design is likely to be triggered from within Service Level Management in the process to “Identify Service Requirements and Acceptance Criteria”. Subsequently, Service Design Coordination will be used to coordinate the use of the SD processes in a logical sequence.

In both situations, an initial analysis is required to identify the core service components and key parameters required for the rest of the Service Design. *Figure 7* illustrates the SD approach using the ITIL SD concepts discussed¹¹. Please note the feedback loops indicate that this process is usually highly iterative.

¹¹This is a simple approach that is useful for many IT Services. More complex Business Services, including some IT Services, require a more sophisticated approach, especially from a management perspective.

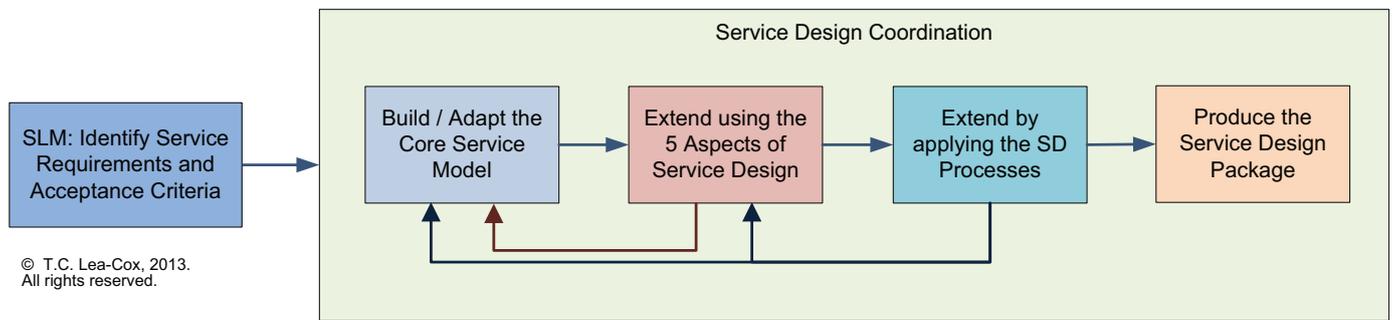


Figure 7: A simple Service Design approach for IT Services

Build / adapt the Core Service Model

Important input for this process is the Service Definition work completed in the Service Strategy¹². There is often another important source of information for the Core Service Model which is the Business Model from TOGAF.

If there is obviously an existing Service Model that can be used to provide a starting set of templates then it should be used. Alternatively, if this seems to be a new type of Service and there is no suitable Service Model available, then the analysis and design performed on this Service will provide the basis for the new Service Model. Note however, there should always be at least a simple view of the core service components from the Service Definition work completed in Service Strategy.

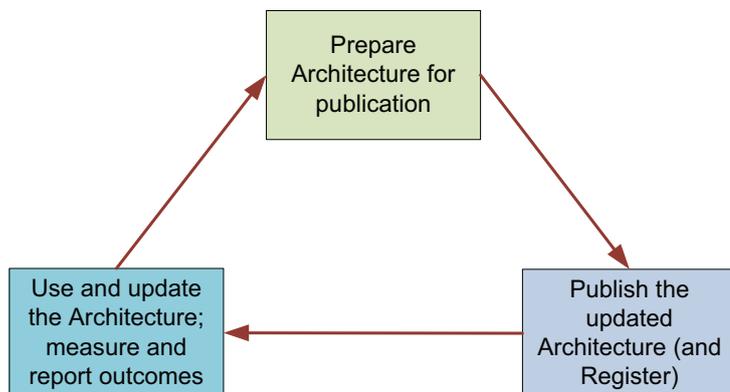


Figure 8: The primary Processes for managing the publication of EA

Processes underpinning the Service

In many instances the best place to start the analysis for a new Service is the processes that will be required to manage the customer's experience of the Service. Defining such processes is second nature to most systems analysts. The following diagrams summarize the essence of what is required:

Figure 8 shows that there are three sets of processes that are required to provide the EA Publishing Service.

- Prepare the organization's architecture for publication. This will include not only the architecture diagrams but also a register so that customers can see what is available.
- Publish the new set of architecture diagrams together with the updated register.
- Then use the diagrams (for example in projects), to create new diagrams and update existing diagrams. This set of processes is also used to monitor and report service usage and performance.

¹² See "Enterprise Architecture and ITIL: Implementing Service Strategy", pp 10 to 14, especially the Core Customer Needs.

Figure 9, a simple Entity Relationship Diagram shows key details about the structure behind these processes:

- First that there are Customers (effectively a Category of Users) that are responsible for part of the organization’s infrastructure represented by an EA “Architecture Domain”. Further that insight into each domain is provided by one or more “Architecture Views” (which in turn consist of one or more architecture diagrams).
- Also that an “Architecture Administrator” is required to administer a Domain on behalf of Customers (mainly, but not only, for governance and publication quality purposes).
- Also that a Register of published architecture views (by Domain) is required.
- Finally, note that Customer Users use (and maintain) architecture diagrams depending on their access rights to the Architecture Views.

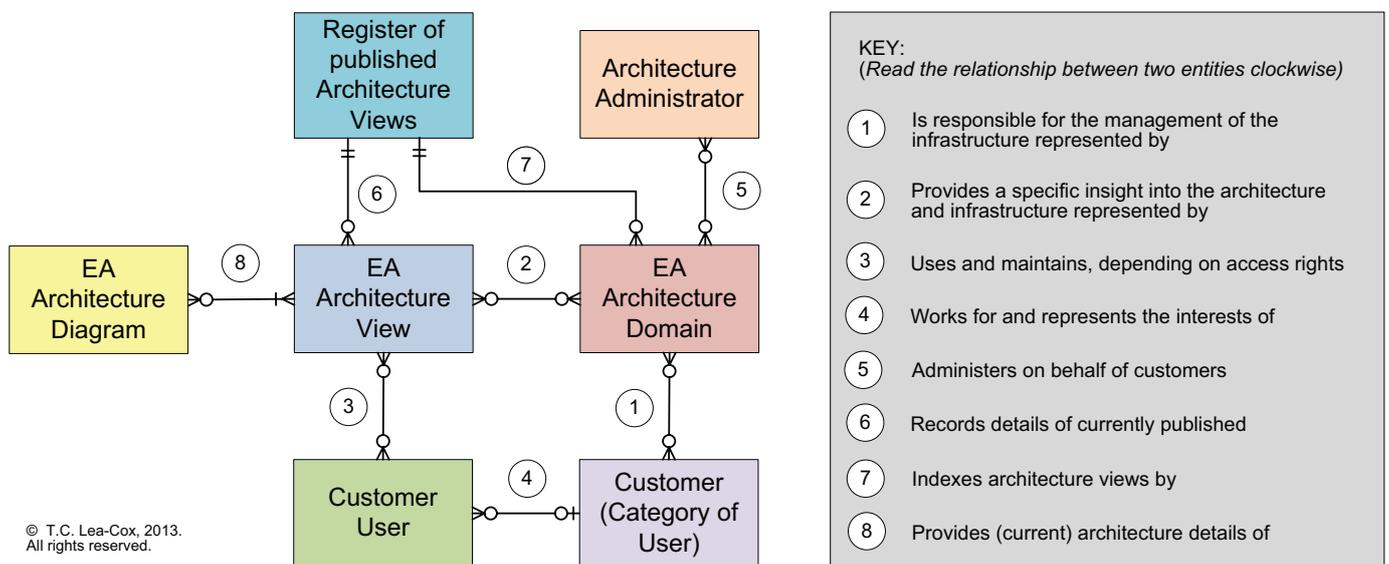


Figure 9: A simple Entity Relationship Diagram for managing the publication of EA

Note also that:

- Architecture Domains correspond to the Business Infrastructure Domains for which Customers need to manage the architecture.
- Architecture Views provide a specific perspective of the Business Domain Architecture consisting of one or more Architecture Diagrams.

The next step (especially in SLM terms) is to identify specific Customer Requirements. Although it is likely that many requirements will be common to most or all Customers, there will be certain requirements that are specific to just one Customer.

Note on the Service Delivery Model

Let us assume that the organization has an established Intranet which works on a portal basis. It would make sense to use this service as much as possible. Hence the Service Model for the Intranet effectively provides the Service Delivery Model for the EA Publishing Service.

Customer Requirements

These need to be identified for “the Customer”. A good starting point is usually the set of Service Requirements in the Service Model and the “core customer needs” identified in the Definition of the Service. For example, two of the requirements¹³ are that:

- The EA department must provide for each (type of Customer) User:
 - Architecture Views that are relevant
 - Architecture Views that are up-to date
 - Architecture Views that are accessible on-location (at the user’s place of work which may be remote)
- The EA department must provide facilities to ensure that only authorised staff will be able to access each Architecture View.

It is likely that, given a better idea of the processes that need to be implemented, these requirements will need to be broken down further and rationalized. For example, two derived (subordinate) requirements from those above might be:

- The Customer must be able to choose one or more specific Architecture Domains on which to focus;
- A Customer User must be authorized to access specific Architecture Views within specific Architecture Domains.

By now we should have a good set of Processes and Service Requirements that give a much clearer description of the Service. We are now in a position to consider the remaining portion of the 5 aspects of Service Design.

Extend the initial description of the Service using the 5 Aspects of Service Design

Service Design Model

Effectively we have already started either to build a new Service Design Model or, if one already existed, to apply the core components of the existing Service Design Model.

The only remaining point to make here is that an existing Service Design Model is likely to have components that can be reused for the rest of the new IT Service design that we are going to discuss, for example, IT Service Metrics or a Service Level Agreement.

Processes, Roles, Responsibilities and Skills

We have covered the initial view of the EA Publishing Service processes. These will be updated further as we develop the design for the new service.

Two key roles were also identified; those of the Customer User (User) and the Architecture Administrator. There are further roles, the most

¹³Paraphrased from the Core Customer Needs in the Service Strategy paper.

important of which are those of the Customer Manager (of a specific Business Domain), the Intranet Administrator and the EA Publishing Service Manager.

It is now possible to produce a RACI Matrix showing the accountability and responsibilities¹⁴. The RACI Matrix for the EA Publishing Service and the descriptions of the roles become an important part of the SDP.

A key part of identifying roles for the new IT Service is to also identify if any new skills are required. In this case there are, for example, one or more Architecture Administrators are responsible for maintaining the access rights to the architecture published on the intranet. Hence, an Architecture Administrator plus one or more deputies need to be trained to do so and training arranged. Training for the Users of the new service will also have to be provided.

Service MIS and Tools

The key tools here are the systems that are used to automate the EA Publishing Service's processes. In this respect it will be the EA Management System used and the Intranet System. As the title suggests a common system for all services is the Service MIS.

EA Management System¹⁵:

Apart from providing facilities to manage and maintain the organization's architecture, this system needs to be able to:

- Select and export all the relevant current Architecture Diagrams for publishing
- Produce an updated (and indexed) Register for all those diagrams that will be exported and then, export the details of the updated Register.

It must also be able to track:

- Versions of the diagrams that have been approved for publication
- Details of who they were approved by and when
- Links required to Architecture Views and Architecture Domains.

Intranet System:

This system needs to provide facilities to:

- Restrict access to the content published to only those that have the appropriate access rights
- Manage these access rights.

Service MIS:

The Service MIS needs to be updated to include all the metrics required to collect and report on the usage and performance of the EA Publishing Service. Note that some of the metrics already being used may be re-used, for example, for usage and performance of the Intranet. (See under

¹⁴For more information: http://en.wikipedia.org/wiki/Responsibility_assignment_matrix

¹⁵The reader may draw their own conclusions about the use of the facilities provided by iServer for this and the next system.

“Measurement Methods and Metrics” for more details about metrics for the EA Publishing Service).

Business and Technical Architecture and Infrastructure

Much of the business context for the EA Publishing Service is derived from the business processes that need to use this service, for example, Programme and Project Management, also Strategic Planning. Here we need to identify any changes required to the business infrastructure to ensure that the EA Publishing Service can be utilized effectively. In this example, it may be simply to ensure that (for example), the programme and project planning procedures are updated.

Similarly we also need to identify any changes that are required to the technical infrastructure that supports the EA Publishing Service. For example, the technical infrastructures required to host and use the EA management System.

Having identified the changes required, we need to specify them (architecturally) for inclusion in the Service Design Package.

Remember also, architecture diagrams may need to be prepared to show the changes required to:

- The EA Management System
- The Intranet System
- (and possibly even) The Service MIS.

Measurement Methods and Metrics

Measurements and Metrics are derived from the requirements for the EA Publishing Service identified earlier. Metrics are usually called Key Performance Indicators (KPIs) in the ITIL books.

An example from the EA Publishing Service requirements identified above are shown in *Figure 10*.

Requirement	Measure of Performance	Metric (KPI)
The EA department must provide for each (type of Customer) User; Architecture Views that are relevant	The Architecture Diagrams must be correctly indexed to one or more Architecture Views and these, to one or more Architecture Domains.	Number of indexing errors in the Architecture Register.
		Number of indexing errors in the Architecture Register reported by Customer Users.
The EA department must provide for each (type of Customer) User; Architecture Views that are up-to date	The Architecture Register and Architecture Diagrams published are up-to-date	Average time between updates
		Number of requests per month by Customer Users to update the Architecture Views and Register

Figure 10: Deriving Metrics from Requirements

Methods here refers to the way that data for the metrics will be collected. For example, consider the metric above; “Number of indexing errors in the Architecture Register”. There may be several actions that are required to identify the actual number of indexing errors, for example:

- By periodic sampling and then by inferring the number of errors.
- By searching for unlinked diagrams, views and domains.

Note that this analysis may result in an iteration back to set up the preventative measure of performing a quality check when each new Architecture Diagram completed is quality assured to ensure that the indexing has been done correctly.

At this stage we have added substantially to the design of our EA Publishing Service. All the new components of the service will be included in the SDP. We now need to consider the remaining (formal) Service Design Processes to apply the common design standards required.

Since none of these processes are formally included in our organization’s Service Management System, we will review these processes to illustrate how they might deliver additional value. As we will see, they do result in some important additional components to our EA Publishing Service.

Extend the Service Design by applying the Service Design Processes

Service Design Coordination (continued)

Note that the Service Design Coordination process is still used to coordinate Service Design at this stage.

Service Catalogue Management (SCM)

If there is a Service Catalogue, SCM provides the process to update the Service Catalogue with details of the new EA Publishing Service. (As SCM is not a formal process it is likely the nearest thing to the Service Catalogue will be the list of IT Services provided in Incident Management, but this is only updated when the new service is transitioned into Service Operations).

Capacity Management

Identifying the capacity required in the supporting assets, resources and other services used by the EA Publishing Service in itself requires an understanding of the structure of the EA Publishing Service and in particular the demand profiles for the new service.

With our EA Publishing Service, there are two sources of demand that will affect the capacity requirements;

- The average and maximum levels of usage of the Architecture Diagrams over say, a typical working week. This may be related more to the number of projects using the Architecture Diagrams and

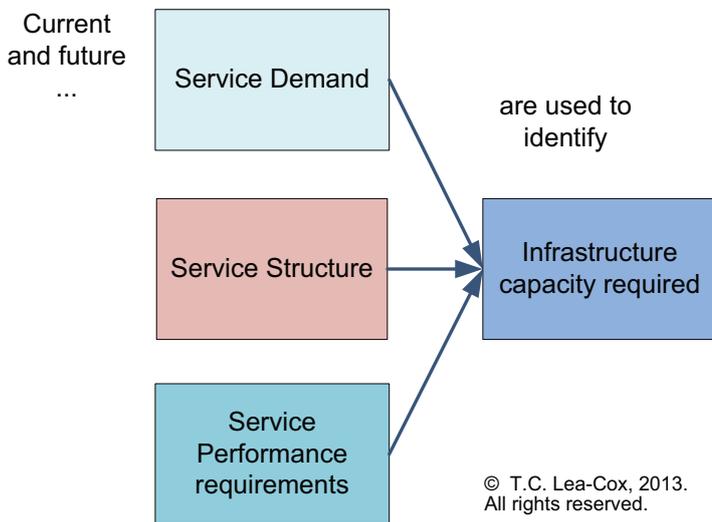


Figure 11: Key input information required to calculate infrastructure capacity required

the usage profiles for these projects. Since diagrams are large-ish files of information and users will not want to wait too long for the requested diagram to load. In some circumstances this may affect (for example) the networking bandwidth required, especially when access is from a remote location.

- The number of updates to the Intranet required, say per month. Again this may be related more to the number of projects, but also the velocity of changes made to the project architecture and the need to publish the latest changes. For example, 20 projects requiring an update of once a week

will result in approximately 80 updates per month, or an average of approximately 4 updates per working day, with say, a maximum of 10 and a minimum of 0 updates per day. Since the process to update and check the Intranet content is unlikely to be entirely automated, this represents a significant workload for the Architecture Administrators controlling the updates.

This sort of logic needs to be applied to all the components of the EA Publishing Service.

There is another issue important to capacity management, that of trends and the impact these trends will have on longer-term capacity requirements. For our EA Publishing Service this is likely to be the trends in volumes of Users, Intranet Updates (and the number of projects) and the Number of Architecture diagrams published.

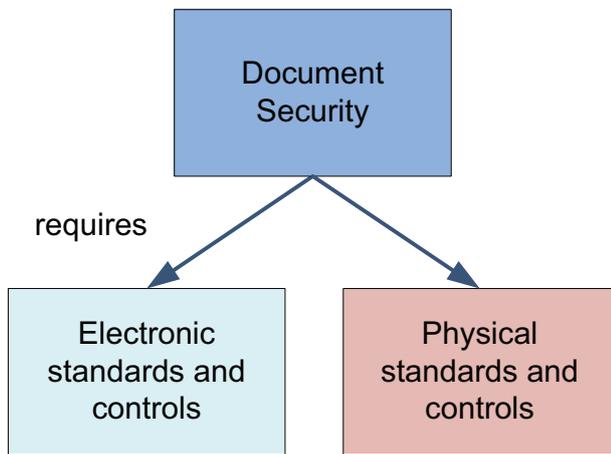
IT Service Continuity Management

Key inputs to IT Service Continuity Management (ITSCM) are the EA Publishing Service continuity requirements. Here, because the service (usually) will not represent a “vital business function” it is likely that it will inherit the standard business continuity requirements. For example, this might be that if part or all of the content of the Intranet is lost, it must be restored by the start of the next working day.

In practice this requires a recovery plan for the EA Publishing Service – and rehearsing to ensure that everyone who is required to participate in the recovery knows their role and what is involved. For minor outages, the EA department will also want to work with Incident Management to ensure that there is a workaround for high-priority access to diagrams during such outages.

Information Security Management

Since Architecture Diagrams are essentially information it is not surprising that this is a key area. In most organizations, at least some



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Figure 12: Document security requires electronic and physical standards and controls

of these diagrams will be classified as “highly confidential”, perhaps even “secret”. This has big implications for the way that they need to be managed.

All architecture diagrams need to be classified in terms of their degree of confidentiality. It may be possible to apply this at the Architecture Domain level which would make the classification process easier. But subsequently it is necessary to specify how each (confidentiality) category of diagrams will be managed, both in their electronic and printed forms.

It is likely that a special “Acceptable Usage Policy” will be required for this. Other key output from this process will be:

- The Information Security Classification system to be applied to all diagrams.
- The standards and controls for managing each type of classified diagram.

Supplier Management

The only supplier of significance here is the department managing the Intranet Service. This may not be the IT department. Although Supplier Management primarily focuses on third party suppliers, some of these principles also apply to in-house suppliers.

The most important of these is the need to understand the capabilities that are agreed with the supplier that will be provided, in this case for the Intranet Service, whether provided in-house or by a third party. This is especially important for negotiating Service Contracts and SLAs with customers of the EA Publishing Service.

Availability Management

As *Figure 6* indicates, many of the issues discussed in the SD processes so far affect Availability Management. Essentially, the EA Publishing Service needs to meet all availability requirements. However, this can only be done within the existing capacity and performance constraints and limitations identified in the analysis and design so far.

For example, if the Intranet has to be taken down periodically for maintenance or for some other reason, the EA Publishing Service will inherit this constraint on availability. Even though Availability Management is not part of the organization’s Service Management System (yet), it is important to provide the following information:

- The standard times that the EA Publishing Service will be available to users of the service
- Any performance limitations to which customers must agree as a condition of using the service
- The conditions under which the EA Publishing Service will be made available to Customer Users.

Service Level Management (continued)

We saw earlier that the start of Service Design may be triggered by the Service Level Management process; “Identify Service Requirements and Acceptance Criteria” and that the resulting Service Requirements are a key input to the design of a Service. In SLM terms the next big step is to negotiate the Service Level Agreements (SLAs) with customers, or at least for a new service, to establish a standard SLA.

Regardless of whether a service is provided internally (by a department within the organization) or externally (by a third party organization) a SLA or its equivalent should be provided. For internally provided services this may be an “Operating Level Agreement” (OLA).

Now that we have a considerably better understanding of the composition and dynamics affecting the service we are in a position to provide a SLA for the EA Publishing Service. In particular, this SLA needs to be harmonised with the Intranet SLA or OLA.

This is not always as simple as it seems and often further iterations to adjust the Service Design are required before an acceptable SLA can be agreed. However, once the SLA has been agreed we can move to the final stage of Service Design, to complete and produce the Service Design Package.

Produce the Service Design Package

You may have noticed that as we have moved through the analysis and design of the EA Publishing Service we have effectively been producing a “bill of materials” for the construction of the EA Publishing Service, especially in architectural terms. For those of you who also know a project management methodology such as Prince2, you will appreciate that this also provides an excellent basis for producing a project plan for the construction and implementation of the EA Publishing Service.

The final step is to plan the Service Transition stage, including the handover to Service Operations and to package this up in the “Service Design Package” (SDP). The SDP then needs to be approved after which, as Change Management is a formal process in our organization, a Request for Change (RFC) must be submitted to Change Management.

Change Management will be one of the ITIL Processes we will consider in the next paper on Service Transition.

Appendix A: Summary of the Processes at each ITIL Service Lifecycle Stage

ITIL Service Lifecycle Stage	ITIL Process
Service Strategy	<ul style="list-style-type: none"> Strategy Management for IT Services Service Portfolio Management Financial Management for IT Services Demand Management Business Relationship Management
Service Design	<ul style="list-style-type: none"> Design Coordination Service Catalogue Management Service Level Management Availability Management Capacity Management IT Service Continuity Management Information Security Management Supplier Management
Service Transition	<ul style="list-style-type: none"> Transition Planning and Support Change Management Service Asset and Configuration Management Release and Deployment Management Service Validation and Testing Change Evaluation Knowledge Management
Service Operation	<ul style="list-style-type: none"> Event Management Incident Management Request Fulfilment Problem Management Access Management
Continual Service Improvement	Seven-step Improvement Process

Appendix B: Summary of acronyms used and their meaning

Acronym used	Meaning
CIO	Chief Information Officer
COTS	Commercial, Off-the Shelf (usually applied to information systems)
EA	Enterprise Architecture
IT	Information Technology
ITIL	IT Infrastructure Library
ITSCM	IT Service Continuity Management
LAN	Local Area Network
OLA	Operating Level Agreement
PAAS	Platform as a Service
RFC	Request for Change
SAAS	Software as a Service
Scrum	Scrum is not an acronym but the name given to an agile software development method.
SD	Service Design
SDP	Service Design Package
SLA	Service Level Agreement
SM	Service Management
SMS	Service Management System
SS	Service Strategy
SOA	Service Oriented Architecture
TOGAF	The Open Group Architecture Framework
VM	Virtual Machine
WOA	Web Oriented Architecture

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