

PRE-READING GUIDE

ITIL® FOUNDATION



ITIL® 4



Introduction to ITIL® 4

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ITIL® Foundation Pre-Reading Guide | r1.1.0

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What is ITIL® 4?

ITIL 4 is a best practice framework for IT service management (ITSM).

Definition: Service management

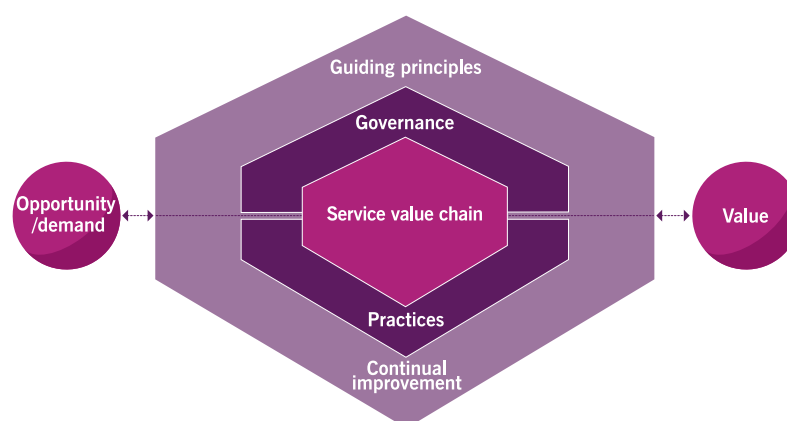
“A set of specialized organizational capabilities for enabling value for customers in the form of services.”

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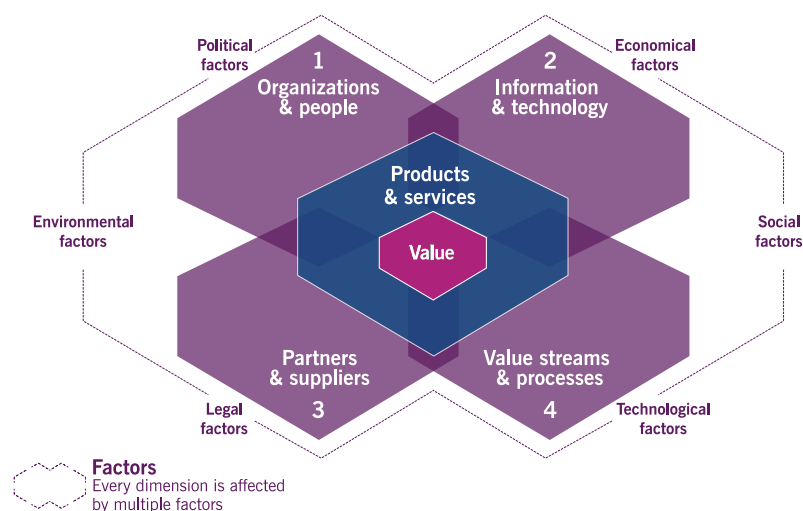
ITIL 4 practices and examples are focused on IT services and ITSM, but the key concepts and models are applicable to any service and context. ITIL 4 provides the guidance organizations need to address new service management challenges and utilize the potential of modern technology.

The key components of the ITIL 4 framework are the ITIL service value system (SVS) and the four dimensions model.

Service value system



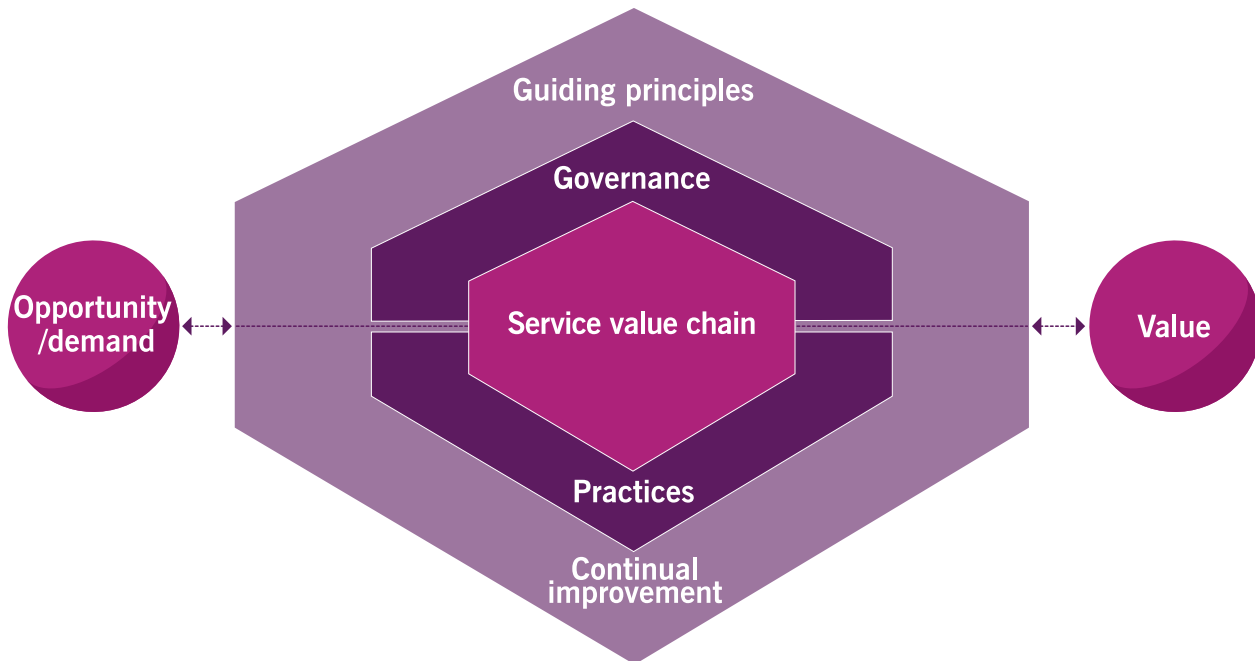
The four dimensions of service management



THE ITIL SERVICE VALUE SYSTEM

Organizations aim to create value for the stakeholders. ITIL helps to achieve this with the ITIL Service Value System (SVS).

The following figure depicts the ITIL SVS.



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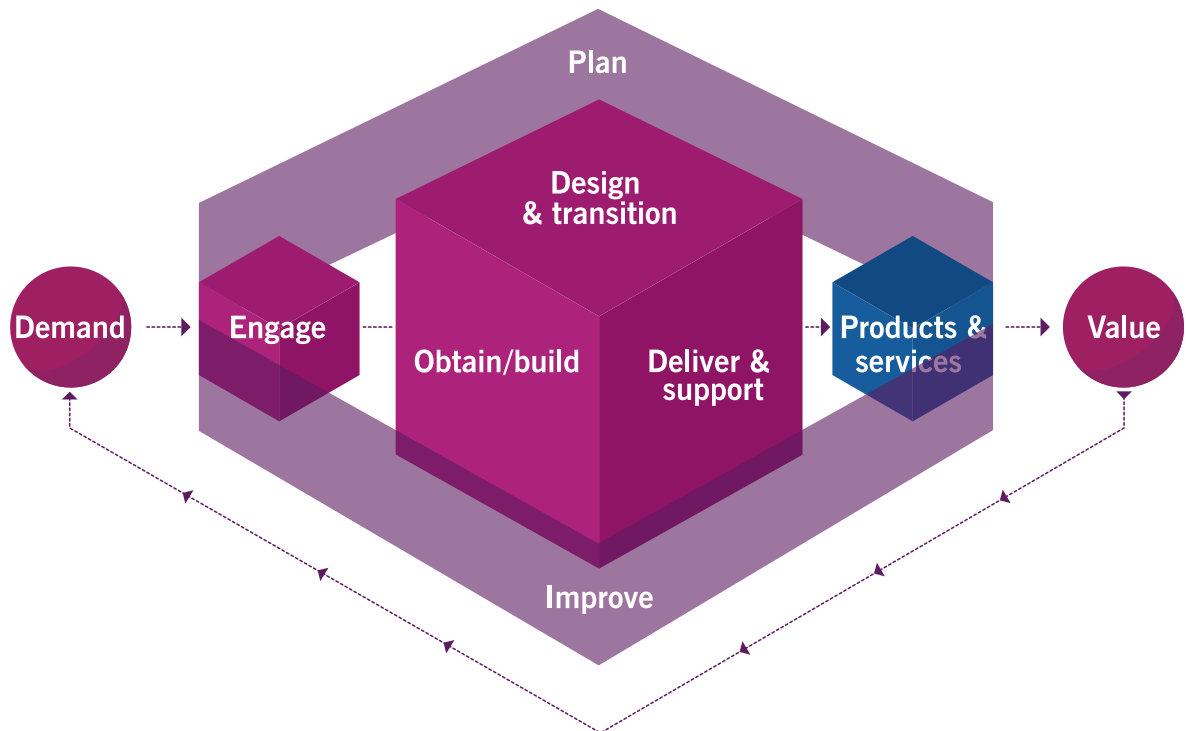
The ITIL SVS describes how all the components and activities of the organization work together as a system to facilitate value creation. These components and activities, together with the organization's resources, can be combined into multiple configurations in a flexible way, but this requires integration and coordination to keep the organization consistent. The SVS provides the means of facilitating this integration and coordination as well as providing a strong, unified, value-focused direction for the organization.

The ITIL SVS describes a number of concepts and includes components that help an organization to perform effective service management. These components include:

- The ITIL service value chain
- The ITIL practices
- The guiding principles of service management
- The continual improvement model

THE ITIL SERVICE VALUE CHAIN

The ITIL service value chain is a set of activities that cover the end-to-end value chain of a service, from initial engagement with customers to the facilitation of outcomes to co-create value.



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The six activities of the service value chain are:

- plan
- improve
- engage
- design and transition
- obtain/build
- deliver and support

The value chain activities can be combined and organized in multiple ways, to form the service value streams. All value chain activities have feedback loops enabling feedback within and between the value streams.

THE ITIL PRACTICES

To manage services and enable value co-creation, organizations need to establish and leverage specific management practices. ITIL 4 defines a management practice as a set of organizational resources designed for performing work or accomplishing an objective. The ITIL management practices, which are a key component of the ITIL service value system, are more than just processes. Practices include activities, resources, and relationships needed to achieve an outcome. They can contribute to value creation across the entire SVS, though some are mainly focused on a more limited area. This is a flexible approach, in which resources are configured as they are needed to provide an appropriate response to the unpredictable nature of IT services. This enables ITIL guidance to be used effectively in many situations.

There are 34 practices that enable the service value chain. (The scope of ITIL Foundation specification includes 15 practices, as **highlighted** in the following table.)

General Management Practices	Service Management Practices	Technical Management Practices
<ul style="list-style-type: none"> ■ Architecture management ■ Continual improvement ■ Information security management ■ Knowledge management ■ Measurement and reporting ■ Organizational change management ■ Portfolio management ■ Project management ■ Relationship management ■ Risk management ■ Service financial management ■ Strategy management ■ Supplier management ■ Workforce and talent management 	<ul style="list-style-type: none"> ■ Availability management ■ Business analysis ■ Capacity and performance management ■ Change control ■ Incident management ■ IT asset management ■ Monitoring and event management ■ Problem management ■ Release management ■ Service catalogue management ■ Service configuration management ■ Service continuity management ■ Service design ■ Service desk ■ Service level management ■ Service request management ■ Service validation and testing 	<ul style="list-style-type: none"> ■ Deployment management ■ Infrastructure and platform management ■ Software development and management

THE ITIL GUIDING PRINCIPLES

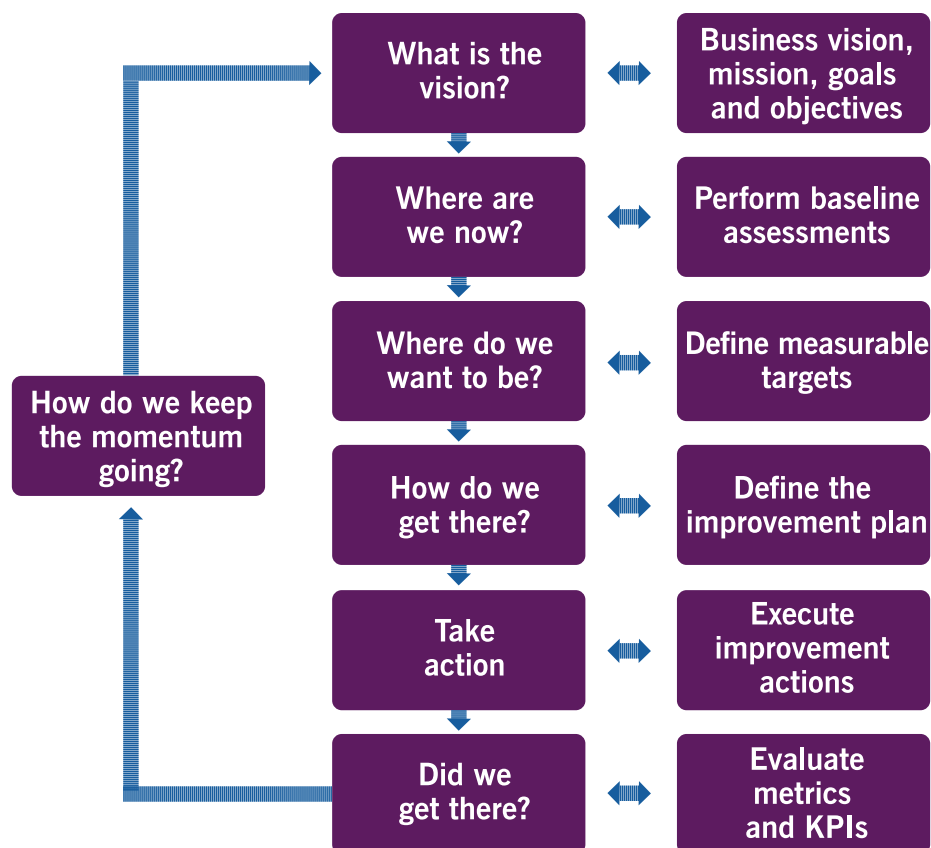
To support effective service management, ITIL 4 provides practitioners and organizations with the seven guiding principles of ITSM. These are universal principles that can be applied to all situations and can be used to guide an organization throughout its lifecycle.

The seven guiding principles are:

- Focus on value
- Start where you are
- Progress iteratively with feedback
- Collaborate and promote visibility
- Think and work holistically
- Keep it simple and practical
- Optimize and automate

THE CONTINUAL IMPROVEMENT MODEL

To enable the establishment and continual improvement of effective service management, ITIL 4 provides a continual improvement model. Continual improvement is the beating heart of the SVS and should be embedded in all activities across the organization.



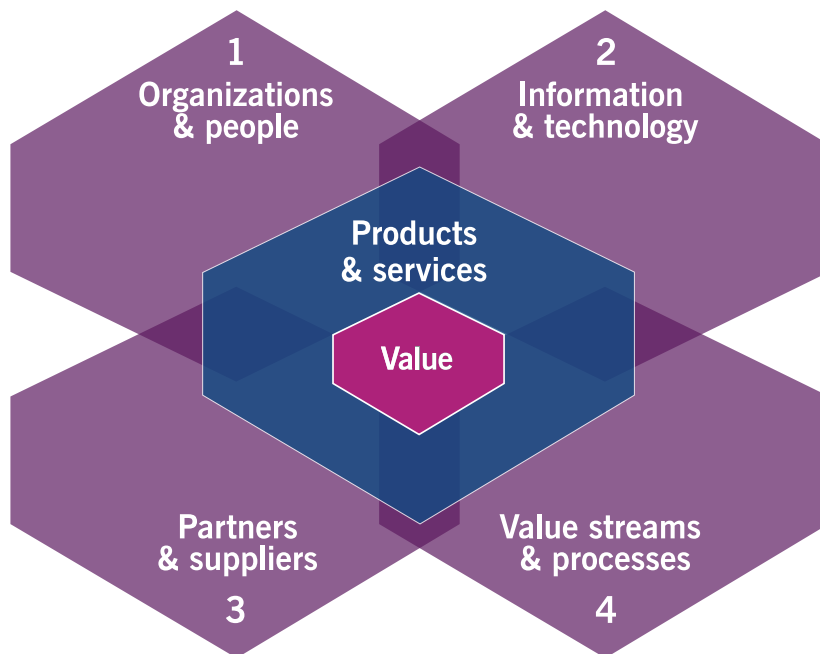
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THE FOUR DIMENSIONS OF SERVICE MANAGEMENT

In order to promote the effective and efficient facilitation of value for customers and other stakeholders, each of the management practices and service management in general, should be considered from the four dimensions:

- Organizations and people
- Information and technology
- Partners and suppliers
- Value streams and processes

The following figure depicts the four dimensions of service management and the relationship between them.



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Integrating ITIL® 4 with Other Frameworks, Methodologies, and Practices

ITIL 4 provides guidance required to address new service management challenges and utilize the potential of modern technology.

There are a number of additional practices referred to in ITIL 4 with which you need to be familiar before you take the ITIL 4 Foundation training. This document will provide an introduction to some of the popular frameworks, methodologies, or practices and it is important to ensure that you are aware of what they are and how they relate to ITIL 4.

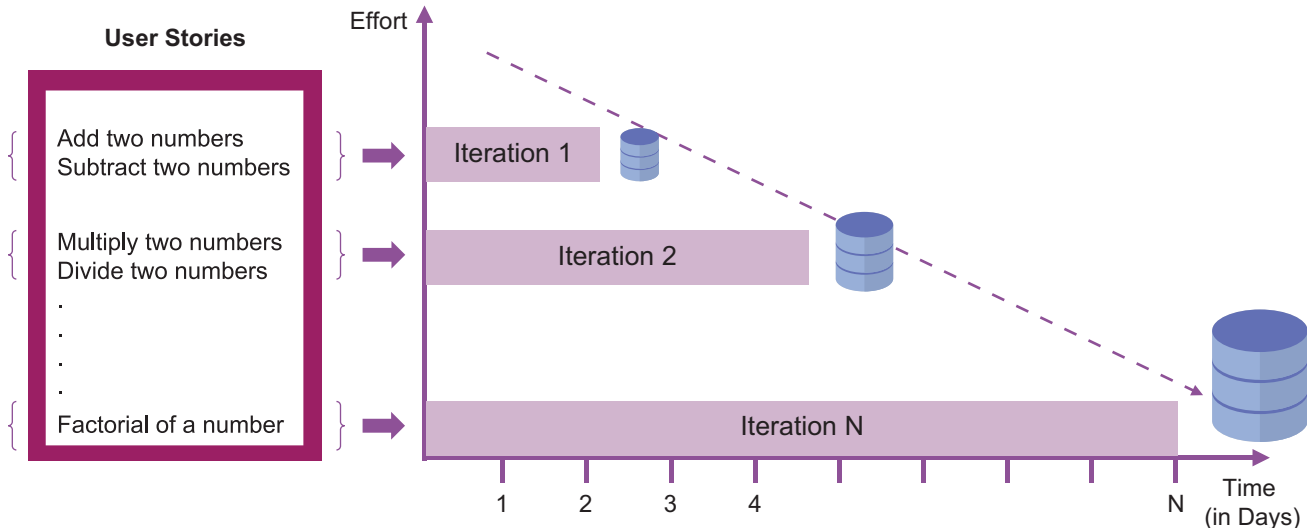
You may have an existing knowledge of some of these frameworks, methodologies, or standards, but reading this document will recap your basics and you will be able to relate with them during the ITIL 4 Foundation training. More information on the interaction of these frameworks with ITIL 4 will form part of the Foundation learning.

This section forms an important part of the additional study required for the ITIL 4 Foundation training and understanding the concepts of ITIL 4.

Agile and Scrum

AGILE: WHAT IT IS?

Agile is a time-boxed and iterative approach of product delivery. It aims to build product incrementally from the start of the project. Agile relies on adaptive planning and iterative development and delivery. It focuses primarily on the value of people in getting the job done effectively.



Agile focuses on smaller functional units instead of developing the complete software in a go.

The Agile way of working breaks a product into functional units according to user stories and prioritizes them to continuously deliver product in short cycles known as iterations. It is often used as a time-boxed, iterative approach to product delivery.

SCRUM: WHAT IT IS?

Scrum is the most popular framework based on Agile. It is an adaptive, iterative, fast, flexible, and effective approach designed to deliver significant value quickly and throughout a project. The Scrum framework is structured in such a way that it supports product and service development in all types of industries and in any type of project, irrespective of its complexity.

A key strength of Scrum lies in its use of cross-functional, self-organized, and empowered teams who divide their work into short, concentrated work cycles called Sprints. The Scrum framework consists of Scrum Teams and their associated roles, events, artifacts, and rules.

Comprehension: *How Agile relates to ITIL 4?*

Agile has its main focus in the engagement and transition of new requirements, dealing with the management of development of a service or product, whereas ITIL 4 is concerned with the entire lifecycle of a product or service, including the ongoing management and delivery of the product or service.

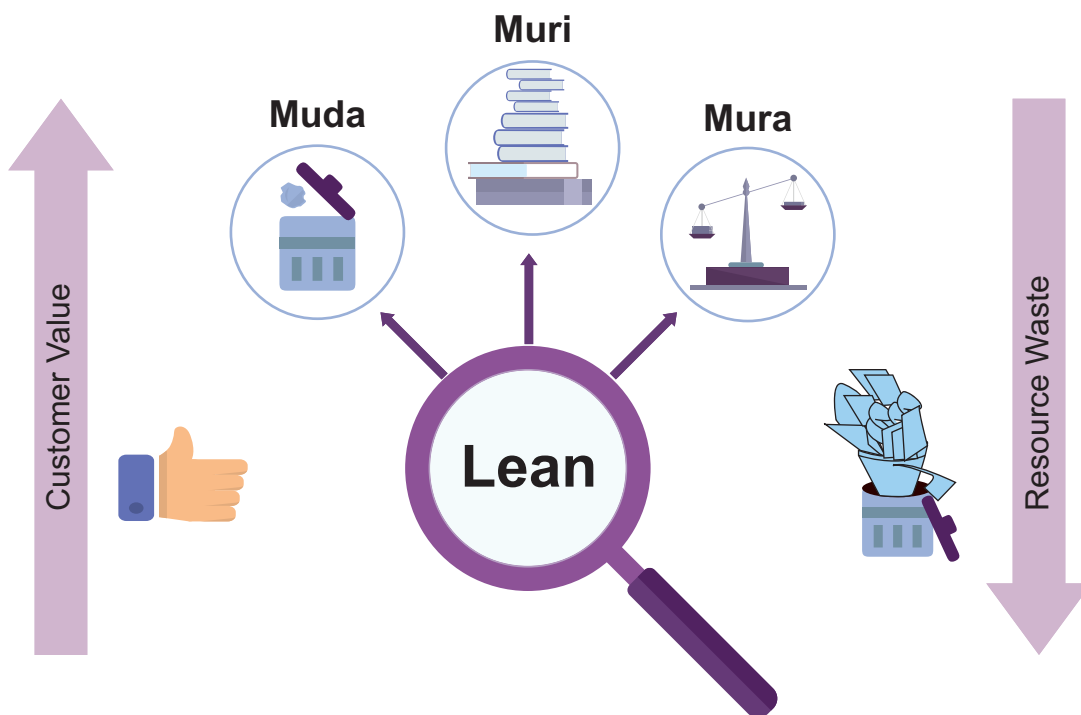
Agile can assist ITIL 4 in the design, transition, and ongoing improvement of the product or service. ITIL 4 will benefit from the Agile approach for requirements that need more speed or agility in release to the customer.

ITIL 4	Agile
Comprehensive framework	Design and management framework
Integrated governance and management	Flexible management
Continual service improvement	Iterative, incremental approach
Customer / consumer focused	Quality focused
Value creation through introduction and management of IT services	Value creation through introduction of IT services

Lean

WHAT IT IS?

Lean is a tested and proven method that uses a collection of tools to improve the way products and services are produced. It is also considered a mindset that pushes individuals to think about making the services better on a daily basis, improving the people, as well as the tools and products. Lean is a tested and proven method that uses a collection of tools to improve the way products and services are produced.



Lean is a term introduced by the Research team of Toyota to describe its business. The primary idea of Lean is to deliver maximum customer value with minimum waste of resources. Lean is an organized way that considers the following aspects to deliver maximum customer value:

- Eliminate waste (also known as Muda)
- Eliminate overburden/too high workload (also known as Muri)
- Eliminate lack of balance in workloads/lack of predictable flow (also known as Mura)

Lean should become the philosophy of how individuals work. The goal is to embed Continuous Improvement in organizations with the tagline of "Lean is how we do our work". Organizations can accomplish Lean in a robust way by forming Kaizen project teams that work towards transforming major improvements to quick wins. These wins are the improvements that can be quickly and easily implemented and are available to users with immediate (visible) benefits.

Comprehension: *How it relates to ITIL 4?*

The focus on removal of waste in the Lean approach supports the ITIL 4 aim of effective and efficient management of products and services. This is particularly important when identifying the requirements of the business in terms of value, so that anything that does not contribute to the creation of value is discarded.

Lean is very useful for ITIL 4 in that it allows a view of the ITIL 4 practices in terms of eliminating waste, to ensure the practices remain streamlined and fit for purpose.

ITIL 4	Lean
Comprehensive framework	Comprehensive approach
Integrated governance and management	Integrated management system
Continual service improvement	Continuous improvement
Customer / consumer focused	Customer focused
Value creation through introduction and management of IT services	Value creation through removal of waste and inefficiency

Kanban

WHAT IT IS?

Kanban uses a visual approach to manage tasks, and has been widely used in agile software development, but is being adapted for wider use in other situations. Work items, or tasks, are displayed on a kanban board, moving from one state to the next. So, a piece of task on which the work has to be done is identified, and then moved to the 'in progress' column. And finally once the task is complete, it is moved to the 'completed' column.

This simple technique was employed at Toyota to manage their stock and inventory consumption, by use of actual cards handed from person to person. This Just in Time (JIT) technique allowed everyone to manage materials as they are required. The adaptation to a Kanban board has enabled this to be used by other industry sectors, not just manufacturing.

Kanban is used by a number of software management tools, such as Trello, to provide a visual representation of a task list, and for monitoring task progress.

Comprehension: How it relates to ITIL 4?

Kanban techniques can be used in any task based activity, from planning a new product or service, to the overall maintenance and improvement of a product or service. As Kanban is a flexible approach that can be adapted to many different uses, but will be particularly helpful in the management of products or services as the requirements are mapped and met. It is a very useful way of engaging with the consumer, so that everyone understands the progress that is being made on any task, no matter who is carrying it out.

Kanban compliments ITIL 4 practices by providing an engaging and visual approach to task management.

ITIL 4	Kanban
Comprehensive framework	Flexible approach
Integrated governance and management	Visual management
Continual service improvement	Clarity of task management
Customer / consumer focused	Task focused
Value creation through introduction and management of IT services	Value creation through management of tasks to completion

DevOps

WHAT IT IS?

DevOps is a CULTURAL and OPERATIONAL model that fosters COLLABORATION to ENABLE high-performance IT to ACHIEVE business goals. DevOps is not a product, standard, specification, framework, or job title. DevOps is about experiences, ideas, and culture to create high-performing IT organizations.

DevOps can mean many things to many people, and there are a lot of definitions in the market.

“DevOps isn’t a thing. It’s not a product, standard, specification, framework or job title. DevOps is about experiences, ideas and culture. It’s about the close communication and collaboration between IT operations and development, and how they can improve the products and services that they produce by thinking differently about how they work together, using a new mentality.”

Gareth Daine, Devops Evangelist

“Fundamentally, **DevOps** is the activity of optimizing the development-to-operations value stream by creating an increasingly smooth, fast flow of application changes from development into operations, with little waste. Optimization of the value stream takes place continuously using various continuous improvement techniques like the Toyota Kata.”

Dave Roberts, Executive Advisor at BMC Software

DevOps Agile Skills Association (DASA) defines the scope of DevOps through six guiding principles. :

- Customer-Centric Action
- Cross-Functional Autonomous Teams
- Create with the End in Mind
- Continuous Improvement
- End-to-End Responsibility
- Automate Everything You Can

For more information about these principles, visit <https://www.devopsagileskills.org/>

DevOps allows IT to meet stakeholder demands for more rapid change and more production releases, without losing quality. DevOps blends the elements of Agile, Scrum, Lean, and IT service management to deliver business value.

Comprehension: *How it relates to ITIL 4?*

DevOps provides a strong focus on the engagement with the business, supporting the overall aim of ITIL 4 to engage with the organization as a whole, by considering the service value. Utilizing DevOps in an organization supports the planning of new IT products and services, and incorporates the development approaches into the overall management of the new product or service.

ITIL 4 is a comprehensive framework, and DevOps compliments this by looking specifically at how development and operations can collaborate and work together to deliver a service or product in an holistic approach for the customer. DevOps also works with other approaches such as Agile, Scrum and Lean, which allows ITIL 4 to utilize the full benefits of all approaches.

ITIL 4	DevOps
Comprehensive framework	Collaborative approach
Integrated governance and management	Integrated management
Continual service improvement	Constant innovation
Customer / consumer focused	Customer focused
Value creation through introduction and management of IT services	Value creation through engagement from development to operation

PRINCE2 / Project Management

WHAT IT IS?

PRINCE2 (an acronym for PProjects IN Controlled Environments) is a de facto process-based method for effective project management.

Project management covers a number of approaches that manage projects to completion. There are many different methodologies (for example PMBoK, PMI) but they have in common the provision of controls and management of workflow to achieve a specific project outcome.

PRINCE2 is a structured project management method based on principles that originate from lessons learned from projects, both good and bad. PRINCE2 helps to meet the ever-increasing demands of the dynamic business scenario while dealing with the challenges presented by the risks and complexities of project management. It achieves this through a controlled, structured, and systematic way of managing projects. A unique advantage of PRINCE2 is that this method can be applied to any type of project and can easily be implemented alongside the specialist, industry-specific models or development life cycles.

Comprehension: *How it relates to ITIL 4?*

Many of the activities undertaken in the ITIL 4 practices, design and transition, obtain and build, and planning will benefit from a project management approach. The project management discipline of quality gates supports the management of tasks, and may be used in conjunction with Agile and Lean approaches to support a dynamic development of new products and services.

Project management can be used in all areas of ITIL 4 where a project management approach would be useful. This will range from improvement programmes, to release management implementations, or the management of a design to operation.

ITIL 4	Prince2
Comprehensive framework	Project management methodology
Integrated governance and management	Integrated management and planning
Continual service improvement	Controllable delivery
Customer / consumer focused	Customer focused
Value creation through introduction and management of IT services	Value creation through management and delivery of specific output

KepnerandFourie®

WHAT IT IS?

The KEPNERandFOURIE® approach deals with problem management and incident management solving issues “First time every Time”, with Root Cause Analysis techniques. “We cannot fix effects, but we can fix causes.” This statement has a direct bearing on how IT staff is going to solve issues and challenges. Incident investigation and resolution are the root to resolving the correct causes. This will directly influence the ability to resolve an incident quickly, accurately, and permanently. The KEPNERandFOURIE® methodology provides a fast and structured approach to problem solving and decision making.

The KEPNERandFOURIE® methodology was founded by Chuck Kepner and Matt Fourie, who is the founder of Thinking Dimensions Global. The KEPNERandFOURIE® methodologies are accepted by ITIL and itSMF organizations across the world.

Comprehension: *How it relates to ITIL 4?*

Problem solving is an important skill to support the continued improvement of all ITIL 4 practices. The KEPNERandFOURIE® approaches provide useful skills that can be employed for any issues that need to be addressed throughout the ITIL 4 framework, but perhaps more obviously in the support and ongoing improvement of delivery and support.

ITIL 4	KEPNERandFOURIE®
Comprehensive framework	Proven approach
Integrated governance and management	Systematic process
Continual service improvement	Improvement actions identified
Customer / consumer focused	Customer focused
Value creation through introduction and management of IT services	Value creation through root cause analysis and reduction of failure

Cloud Computing

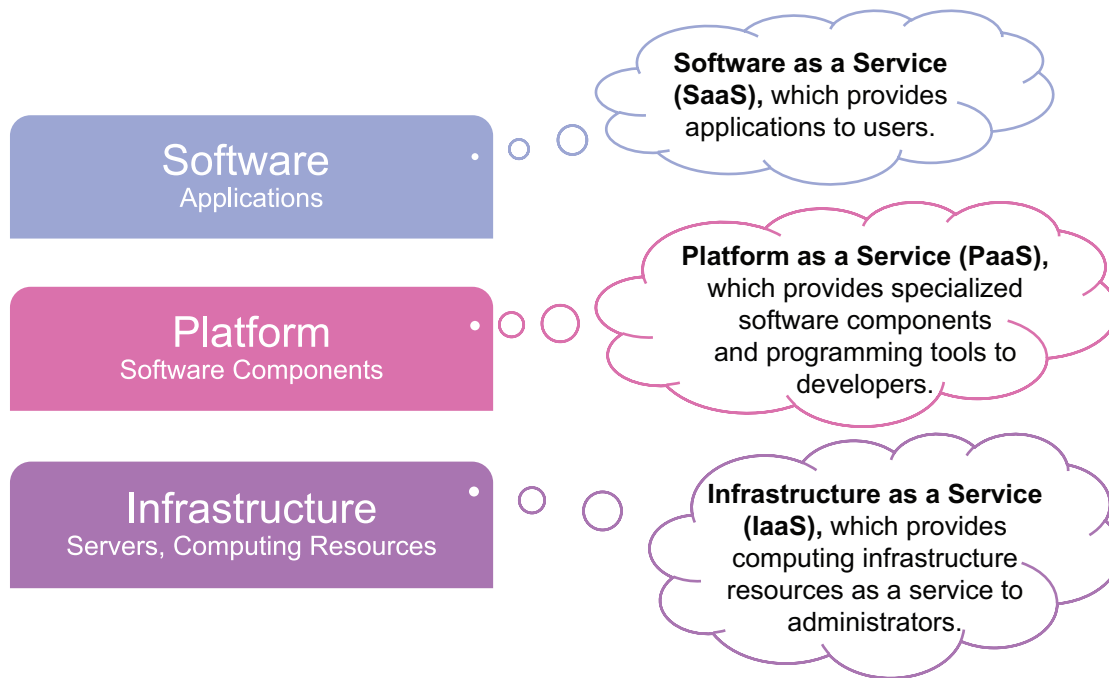
WHAT IT IS?

Cloud computing is the delivery of computing services – servers, storage, databases, networking, software, analytics, and more – over the network (“the cloud”). Cloud computing is primarily a service (business model) backed by technology, and includes architectures and standards. Organizations offering the computing services are called cloud providers and typically charge for cloud computing services based on usage.

Cloud computing is a big shift from the traditional way businesses think about IT resources. Here are the common reasons why organizations are turning to cloud computing services:

1. Cost
2. Speed
3. Global scale
4. Productivity
5. Performance
6. Reliability
7. Flexibility / Scalability

Most cloud computing services fall into three broad models: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS).



There are four different ways to deploy cloud computing resources:

- Public clouds are owned and operated by a third-party cloud service provider, which delivers computing resources such as servers and storage over the Internet.
- A private cloud gives a single cloud consumer organization the exclusive access to and usage of the infrastructure and computational resources.
- Hybrid clouds combine public and private clouds, bound together by technology that allows data and applications to be shared between them. Cloud computing services work a little differently, depending on the provider.
- More recently the fourth approach of a community cloud is employed. This is a multi-tenant platform which allows several companies work on the same platform, given that they have similar needs and concerns.

Comprehension: *How it relates to ITIL 4?*

Cloud computing has changed the way organizations approach sourcing IT technology, with more reliance on third-party suppliers. This has increased the importance of ITIL 4 practices managing suppliers and with the management of technology in terms of capacity and availability planning.

Utilizing cloud computing is now common and the management approaches of ITIL 4 provide mechanisms for the management of the offerings.

ITIL 4	Cloud Computing
Comprehensive framework	Delivery mechanism for computing services
Integrated governance and management	Technology management
Continual service improvement	Third party providers
Customer / consumer focused	Technology focused
Value creation through introduction and management of IT services	Value creation through management of technological solutions

COBIT 5

WHAT IT IS?

COBIT 5 is a comprehensive framework that assists enterprises in achieving their objectives for the governance and management of enterprise IT. It helps enterprises create optimal value from IT by maintaining a balance between realizing benefits and optimizing risk levels and use of resources.

COBIT 5 enables IT to be governed and managed in a holistic manner for the entire enterprise, taking in both the full end-to-end business and IT functional areas of responsibility, while considering the IT-related interests of internal and external stakeholders. COBIT 5 is generic, and useful for enterprises of all sizes.

Comprehension: *How it relates to ITIL 4?*

ITIL 4 is encompassing more of the governance and management of IT across the organization, and COBIT 5 provides a framework that relates the governance requirements to actual measurement. This provides the organization as a whole with a trusted mechanism for demonstrating compliance across the whole enterprise.

A combination of ITIL 4 providing what the requirements for governance are and COBIT providing how they can be measured will assist in a holistic approach to ensure all the requirements are identified and met.

ITIL 4	COBIT
Comprehensive framework	Comprehensive framework
Integrated governance and management	Integrated governance and management
Continual service improvement	Benefits realization
Customer / consumer focused	Customer focused
Value creation through introduction and management of IT services	Value creation through evidence based benefits realization

Pre-Course Assessment

SECTION 1: INTRODUCTION TO ITIL® 4

Q1. “A person or a group of people that has its own functions with responsibilities, authorities, and relationships to achieve its objectives” is the definition of:

- a) A management framework
- b) A project methodology
- c) An organization
- d) A system for supporting services

Q2. The ITIL service value system describes a number of components that help an organization to perform effective service management. These include:

- i The ITIL service value chain
 - ii The ITIL practices
 - iii The four dimensions of service management
 - iv The guiding principles of service management
 - v The continual improvement model
- a) i, iii and iv only
 - b) i, ii, iii and iv only
 - c) i, ii, iv and v only
 - d) All of the given

Q3. The activities of the service value chain are:

- i Plan
- ii Restore
- iii Improve
- iv Engage
- v Eliminate
- vi Design and transition
- vii Obtain/build
- viii Operate and manage
- ix Deliver and support

- a) i, iii, iv, vi, vii, and ix only
- b) i, ii, iii, iv, v, and vi only
- c) i, iii, v, vii, and ix only
- d) All of the given

Q4. Identify the missing term in the following sentence.

“The ITIL management practices, which are a key component of the ITIL service value system, are more than just processes. Practices include activities, resources, and needed to achieve an outcome.”

- a) Funding
- b) Management
- c) Governance
- d) Relationships

Q5. In ITIL 4, “organizations and people; information and technology; partners and suppliers; value streams and processes” are referred to as:

- a) An audit structure
- b) Four practices in ITIL 4
- c) Four dimensions of service management
- d) A system for managing suppliers

Q6. Which of these are part of the seven guiding principles?

- i Focus on value
 - ii Progress iteratively with feedback
 - iii The four dimensions of service management
 - iv Think and work holistically
 - v The continual improvement model
- a) iii and v only
 - b) i and iii only
 - c) i, iii, and iv only
 - d) i, ii, and iv only

Q7. What action happens at the “Take action” step of the continual improvement model:

- a) Define measurable targets
- b) Execute improvement actions
- c) Perform baseline assessments
- d) Define the improvement plan

ANSWER KEY

Question	Answer
1	c) An organization
2	c) i, ii, iv and v only
3	a) i, iii, iv, vi, vii, and ix only
4	d) Relationships
5	c) Four dimensions of service management
6	d) i, ii, and iv only
7	b) Execute improvement actions

SECTION 2: INTEGRATING ITIL® 4 WITH OTHER FRAMEWORKS, METHODOLOGIES, AND PRACTICES

Q1. What does the term Muda refer to?

- a) Waste
- b) Value
- c) Risks
- d) Product

Q2. Eliminating lack of balance in workloads or lack of predictable flow is known as:

- a) Muda
- b) Muri
- c) Mura
- d) Lean

Q3. Identify the missing word(s) in the following sentence.

The way of working breaks a product into functional units according to user stories and prioritizes them to continuously deliver product in short cycles known as iterations.

- a) Lean
- b) Six Sigma
- c) Agile
- d) ITIL 4

Q4. Which of the following statements are correct?

- i Scrum manages short, concentrated work cycles called Sprints.
 - ii The Scrum framework consists of Scrum Teams and their associated roles, events, artifacts, and rules.
 - iii Scrum is an adaptive, iterative, fast, flexible, and effective methodology
- a) Only i and ii
 - b) Only ii and iii
 - c) Only i and iii
 - d) All of the three

Q5. Identify the missing word in the following sentence.

..... uses a visual approach to manage tasks, used in agile software development, being adapted for wider use.

- a) Kanban
- b) Agile
- c) Scrum
- d) Lean

Q6. What are the columns on a Kanban board used for?

- a) Listing tasks by who owns them
- b) Listing tasks on the basis of their priority
- c) Listing tasks by risk analysis
- d) Listing tasks and tracking progress to completion

Q7. DevOps is about experiences, ideas, and culture to create high-performing IT organizations. Which of these are part of DevOps?

- i Constant innovation
 - ii Visual management
 - iii Customer focused
 - iv Value creation through engagement from development to operation
- a) i and iii only
 - b) i, ii, iii only
 - c) I, iii, and iv only
 - d) I, ii, and iv only

Q8. DevOps Agile Skills Association (DASA) defines the scope of DevOps through how many guiding principles?

- a) 4
- b) 5
- c) 6
- d) 7

Q9. Identify the missing term in the following sentence.

The approach deals with problem management and incident management solving issues “First time every Time”, with Root Cause Analysis techniques?

- a) Agile
- b) KEPNERandFOURIE®
- c) Lean
- d) DevOps

Q10. Most cloud computing services fall into three broad models. Which of these are the correct three models?

- i Infrastructure as a Service (IaaS)
 - ii Platform as a Service (PaaS)
 - iii Cloud as a Service (CaaS)
 - iv Software as a Service (SaaS)
- a) i and iii only
 - b) i, ii, and iii only
 - c) i, iii and iv only
 - d) i, ii and iv only

ANSWER KEY

Question	Answer
1	a) Waste
2	c) Mura
3	c) Agile
4	b) Only ii and iii
5	a) Kanban
6	d) Listing tasks and tracking progress to completion
7	c) i, iii, and iv only
8	c) 6
9	b) KEPNERandFOURIE®
10	d) i, iii and iv only

