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WELCOME

FOREWORD BY THE CEO

At PeopleCert, we believe that excellence is a journey, not a destination. From the very beginning, our vision has been clear: to empower organizations and individuals to realize their full potential.
Our relentless pursuit of excellence has shaped our path to becoming a global leader in best practice frameworks and certifications. Our product portfolio, delivered in 200+ countries every year, includes ITIL®, PRINCE2®, DEVOPS INSTITUTE®, and LANGUAGECERT®, and City & Guilds. We empower millions of learners worldwide, including 50,000 leading companies (82% of the Fortune 500) and 800 government organizations.

We achieve this through our extensive network of 3,000 training, consulting, and tool vendor partners, 3,000 academic institutions, and our award-winning online proctoring solution, ensuring accessibility and excellence at every level.

Since our inception, our core values (Quality, Innovation, Passion, Integrity, Clarity, and Velocity) have guided every decision we make, forming the foundation of our sustained success.

At the heart of PeopleCert's success is our dedicated global team of 3,000 professionals from 40 diverse nationalities, whose expertise and commitment fuel our growth and innovation. Beyond business, we are deeply committed to Environmental, Social, and Governance (ESG) principles, ensuring our impact extends beyond certifications to meaningful contributions in education, employment, and social inclusion.

Our excellence has been recognized with over 60 prestigious awards in entrepreneurship, business excellence, technology innovation, diversity initiatives, and sustainability efforts. In 2023, PeopleCert's achievements were further celebrated by becoming an INSEAD Business Case Study, serving as an exemplary model of global business leadership.

As we look ahead, we remain steadfast in our commitment to success and purpose-driven growth. Our journey is powered by our ecosystem and our unwavering belief that together we will continue to shape the future of skills. Dream it, do it!

Byron Nicolaides
President and CEO, PeopleCert

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ITIL 4 Foundation

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With sincere appreciation, we thank our ITIL community for bringing together knowledge, insights, experiences, and passion for cultivating digital product and service management skills essential to excel in any profession.

CONVENTIONS USED IN THIS BOOK

ITIL Foundation (Version 5)

ITIL Foundation (Version 5) is the first publication of the new ITIL (Version 5), the latest evolution of the most widely adopted guidance for service management. Its audience ranges from IT and business students taking their first steps in service management to seasoned professionals familiar with earlier versions of ITIL and other sources of industry best practice. This Official Book will:

- provide readers with an understanding of the ITIL framework and how it has evolved to adopt modern technologies and ways of working
- explain the concepts of the service management framework to support candidates studying for the ITIL Foundation exam
- act as a reference guide that practitioners can use in their work, further studies, and professional development.

We hope you will find it useful!

Capitalization

Capitalization is used for acronyms and particular terms in order to designate the origin of the acronym.

Glossary terms

Please note that certain terms are **emboldened** in the main text. This is to signify their inclusion in the glossary. They are emboldened on first mention only.

Spelling

Please note that the ITIL Foundation Official Book follows British English in the Oxford style spelling conventions throughout. For more information please refer to House style | Oxford Academic[1]

Model names

Please note that in their first occurrence models, components and methods used in ITIL will be mentioned as ITIL <<model name>>. In later mentions, these models or components can be referenced without ITIL preceding their name or with a short version of the name. More specifically:

Table 0.1 Model names and abbreviations

Full model/component name	Short name
ITIL Four Dimensions of Product and Service Management	Four Dimensions or ITIL 4Ds
The ITIL Service Relationship Model	ITIL SRM
The ITIL Product and Service Lifecycle Model	Lifecycle Model or ITIL PSLM
The ITIL Value System	ITIL VS
The ITIL Guiding Principles	ITIL GP
The ITIL AI Capability Model	ITIL AICM
The ITIL Service Journey Model	ITIL SJM
The ITIL Transformation Model	ITIL TM

ITIL® Official Qualification Scheme



Figure 0.1 ITIL® Official Qualification Scheme (Version 5.0)

Notes:

- ITIL Foundation is the **only certification prerequisite** across **all** Core Modules, including ITIL Transformation.
- ITIL Foundation and ITIL AI Governance have **no prerequisites.**
- ITIL Transformation may be taken **immediately after ITIL Foundation**. While sequencing is flexible, the scheme illustrates the **recommended learning pathway.**

Designations:

- **ITIL Master:** ITIL Practice Manager + ITIL Managing Professional + ITIL Strategic Leader
- **ITIL Practice Manager:** ITIL Foundation + ITIL Monitor, Support and Fulfill **or** ITIL Plan, Implement and Control **or** ITIL Collaborate, Assure and Improve + ITIL Transformation
- **ITIL Managing Professional:** ITIL Foundation + ITIL Product + ITIL Service + ITIL Experience + ITIL Transformation
- **ITIL Strategic Leader:** ITIL Foundation + ITIL Strategy + ITIL Transformation

For more than 30 years, ITIL has shaped the IT Service Management (ITSM) industry by providing trusted guidance, training, and certification. ITIL (Version 5) builds on all previous versions of ITIL with an integrated and contemporary approach digital product and service management, reflecting the realities of today's digital organizations.

ITIL (Version 5) reframes established practices through the lens of value co-creation, end-to-end value streams, and digital operating models, ensuring that both service management and digital product management contribute directly to business and mission outcomes. The guidance aligns naturally with modern delivery approaches, including Lean, Agile, DevOps, Product-centric delivery, and AI-enabled practices, providing a coherent model that supports both operational stability and rapid innovation.

With the new ITIL Product and Service Lifecycle Model, the ITIL Value System (formerly known as ITIL SVS), governance guidance, and adaptable operating patterns, ITIL (Version 5) equips organizations to address evolving challenges across digital product and service management. It also enables them to harness the full potential of modern technologies, including advanced automation and AI solutions. The result is a flexible, coordinated, and integrated system for the effective management of digital products and services.

ITIL® Official Qualification Scheme explained

ITIL Foundation (Version 5) is a prerequisite for any ITIL (Version 5) certification, except for the extension module ITIL AI Governance, which does not have any prerequisite.

ITIL Practice Manager (Version 5) is awarded when any **ONE** certification of the ITIL Monitor, Support and Fulfil, OR ITIL Plan, Implement and Control, OR ITIL Collaborate, Assure and Improve **AND** the ITIL Transformation (Version 5) are achieved.

ITIL Managing Professional (Version 5) is awarded when the ITIL Product (Version 5), ITIL Service (Version 5), ITIL Experience (Version 5) **AND** ITIL Transformation (Version 5) certifications are achieved.

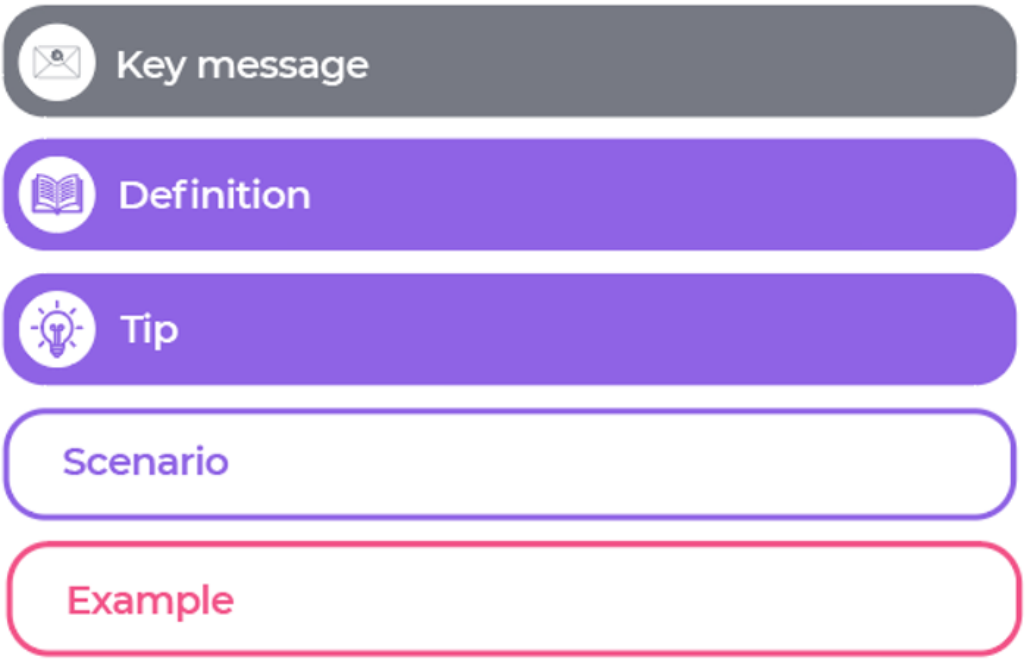
ITIL Strategic Leader (Version 5) is awarded when ITIL Strategy (Version 5) **AND** ITIL Transformation (Version 5) certifications are achieved.

ITIL Master (Version 5) is the highest designation, awarded when the ITIL Practice Manager (Version 5), ITIL Managing Professional (Version 5), and ITIL Strategic Leader (Version 5) designations are all achieved.

The ITIL Official Books are supported by the ITIL Official Practice Guides, which contain pragmatic, hands-on guidance that can be applied in the context of all ITIL Official Books. Each of the five higher level Official Books has relevant practices supporting them. The ITIL Official Books and Official Practice Guides, excluding the ITIL Foundation (Version 5) Official Book, can be accessed online with a PeopleCert Plus Membership. Visit our website for more information.



INFORMATION ICONS



CHAPTER 1
INTRODUCTION

1.1 Evolving IT service management

Since the middle twentieth century, computing technology has been increasingly adopted by various industries. By the end of the first quarter of the twenty-first century, multiple waves of technological adoption have occurred, some of which have transformed the way human societies live, operate, and evolve. Examples include, but are not limited to, the Internet, wireless networks, mobile devices, cloud computing, and artificial intelligence. There is no reason to believe that this development of technology will stop or that its impact on people and society will lessen. However, the relationship between humans and technology is also evolving. At the time of writing, countries and organizations are moving away from Industry 4.0, focused on automation, efficiency, and productivity, towards Industry 5.0, characterized by human-centricity, sustainability, and resilience. The roles of human and technology are shifting from 'humans operating technology' to 'humans collaborating with technology'. Sustainability becomes a core pillar, rather than a secondary concern.

This evolution requires changes in the approach to management of technology. Over the last 40 years, good practices in technology management have undergone several major shifts:

- **from** managing technology systems **to** managing technology products and services
- **from** focusing on outputs and performance **to** focusing on value, outcomes, and experience
- **from** specialization **to** collaboration
- **from** optimizing for efficiency **to** enabling adaptability and resilience
- **from** order and standardization **to** embracing complexity and encouraging diversity
- **from** prioritizing profit **to** balancing profit, people, and the planet.

Many frameworks emerged and evolved to support this evolution of technology management. Organizations have been adopting Lean and Agile, moving from projects to products, from silos to multidisciplinary teams, from command and control to servant leadership.

In this edition of ITIL, these and other trends have been reviewed and integrated into the ITIL framework and practices, reflecting their evolution from 1990s up to 2020s. The result is a holistic, practical, and coherent framework supported by a comprehensive body of knowledge.

1.2 About ITIL

ITIL is the world's most widely adopted source of good practice for managing technology-based services and creating value for customers and other stakeholders. The first version of ITIL was released in late 1980s, when the UK government's Central Computer and Telecommunications Agency (CCTA) sought to standardize IT management across government departments, responding to the growing complexity and decentralization of IT environments. Since then, complexity and decentralization of business and technology environments have continued to increase, prompting the industry to respond by adopting new approaches, methods, and frameworks. ITIL has been evolving with the industry, absorbing and integrating new ways of working, managing, and leading in technology organizations.

Early versions of ITIL were written as the 'IT Infrastructure Library'. It is still a common misconception: even ITIL-certified professionals are sometimes unaware of the fact that 'ITIL' stopped being an abbreviation more than 10 years ago. Indeed, even the ITIL version published in 2007 and updated in 2011 (ITIL Version 3) had little to do with 'IT infrastructure'. The abbreviation has become a brand for the globally adopted ITSM good practice. Today, ITIL is

growing beyond IT service management. It has become a framework and best-practice guidance for **digital product and service management.**

Why 'digital'? 'Digital technology' and 'digital transformation' refer to the integration of advanced digital tools and a shift in business models, culture, and customer engagement. This is a broader concept than IT, encompassing not only technology but also organizational change and innovation, and ITIL addresses all these aspects.

Why 'product and service management'? Product management is widely adopted as an approach to discovery, creation, and delivery of digital solutions for customers. At the same time, despite being based on the same principles of focusing on value, collaboration, and transparency, product management tends to be presented and adopted in isolation from service management. This may lead to another cycle of silo mentality, lack of attention to customer needs, duplication of efforts, and value leakage. ITIL offers an end-to-end Lifecycle Model for digital products and services, where the concepts of digital product and service are integrated. Organizations adopting this model will benefit from the synergy of good practices in product and service management.

Today, ITIL is complexity- and AI-native, reflecting and addressing the latest developments in both business, social, and technology environments. ITIL continues to evolve, and this version incorporates the proven concepts and models from ITIL 4 and earlier versions: the value system model; the value chain and value streams concepts; the management practices based on the Four Dimensions of Product and Service Management; the continual improvement model and the Guiding Principles. At the same time, this version offers a new model for the digital product and service lifecycle supported by new value chain activities and a strong focus on digital products and experience, supported by dedicated publications, a practical guide on management system transformations, and many minor improvements and additions. ITIL (Version 5) reflects the rapid evolution of digital technology and provides tailorable, practical, and value-oriented guidance for the successful management of technology and technology-enabled business.

1.2.1 ITIL Official Books

Today, ITIL addresses the following areas of technology and business management:

- **ITIL Strategy (Version 5):** defining and continually adjusting a digital strategy that is effective, adaptive, responsible, and sustainable.
- **ITIL Product (Version 5):** envisioning, creating, and delivering digital products that support the digital strategy of the organization and meet the needs and expectations of customers, users, and other stakeholders.
- **ITIL Service (Version 5):** enabling and supporting value creation by delivering high service quality, supporting users, and optimizing operations.
- **ITIL Experience (Version 5):** understanding and continually improving the experience of people involved in the management and use of products and services, on both service provider and service consumer sides of service relationships.

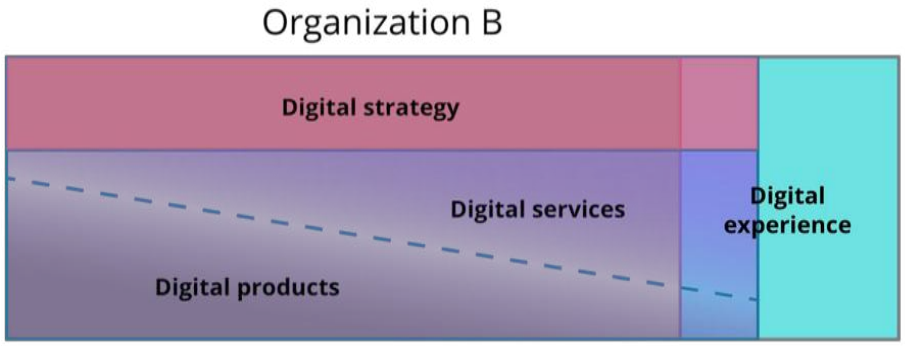


Figure 1.1a Key aspects of digital product and service management in an organization

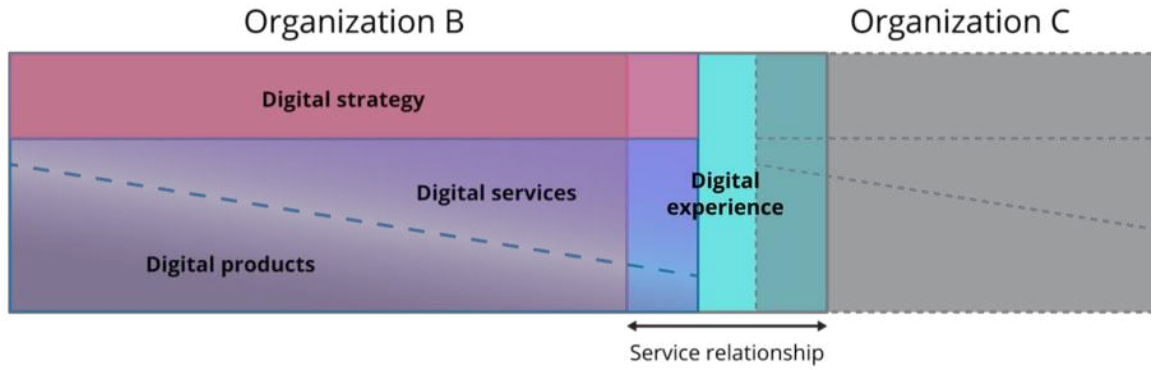


Figure 1.1b Key aspects of digital product and service management in an organization acting as a service provider

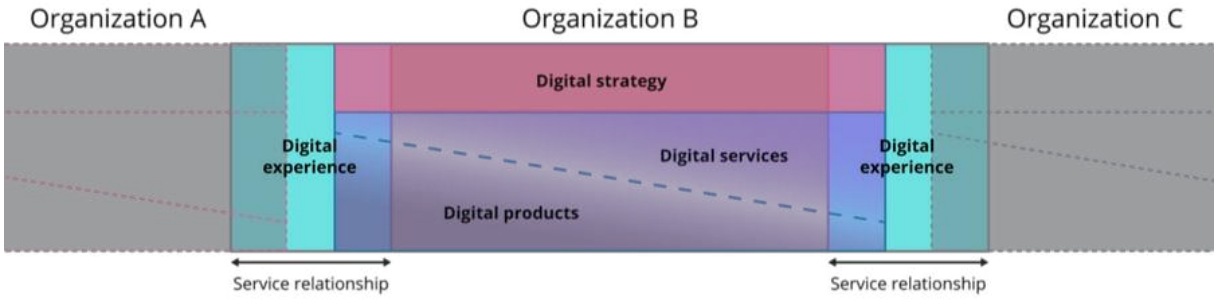


Figure 1.1c Key aspects of digital product and service management in an organization acting as a service provider and a service consumer

ITIL provides guidance on each of these areas in four Official Books, supported by professional training and certification. These are addressed primarily to managers, from team leads to C-level, and to leaders of digitally enabled organizations.

To succeed in digital product and service management, organizations develop many capabilities, from strategic to operational. ITIL offers structured practical guidance for 34 product and service management capabilities in the **ITIL Official Practice Guides**. These are addressed to product and service management practitioners and managers, including team members, team leads, and other managers responsible for the respective organizational capabilities.



This Foundation book and relevant Official Practice Guides are the best combination for anyone starting their career in product and service management. Together, they equip readers with understanding of the key product and service management concepts and with actionable practical recommendations that can be applied in the workplace.

Some of the management practices are supported by official training and certification. Together, Official Books and Practice Guides provide a comprehensive body of knowledge for effective digital product and service management.

Organizations constantly change, and they constantly change the way they use and manage technology. This constant state of change requires the ability to identify, implement, and sustain improvements to the organization's governance and management system. To support organizations in this continuing transformation, ITIL offers the ***ĪTĪL Transformation (Version 5)*** Official Book, which provides a practical and adaptable framework for organizational transformations, ranging from relatively small initiatives to major change programmes, enriched with step-by-step recommendations and a range of tools and methods. It is applicable to any version of ITIL guidance and compatible with other bodies of knowledge organizations use in their digital transformation journey.

Management of digital products and services is constantly shaped by technology developments. Sometimes adoption of innovative technologies leads to a widespread shift that affects the way business is conducted, creates new types of businesses, and disrupts industries and ecosystems. This happened with adoption of the Internet, mobile networks, and it is happening at the time of ITIL (Version 5) release – this time with the widespread adoption of Large Language Models (LLM) and other AI solutions. To benefit from AI adoption without putting themselves at unacceptable risk, organizations need to ensure effective governance of the way AI tools are used. ITIL addresses this need with the ***ĪTĪL AĪ Governance (Version 5)*** Official book, training and certification. This extension is recommended for professionals at all levels, from practitioners to leaders, and of all specializations, because all management areas listed above are affected by the adoption of AI.

All ITIL publications are based on the ITIL product and service management framework described in the **ITIL Foundation (Version 5)** Official Book — this book. It introduces a number of concepts and models that help to develop an effective, adaptable, and sustainable governance and management system for digital technology in organizations of any size, complexity, and business model. Besides providing a foundational framework for other publications and their practical application, this book also serves as an introduction to digital product and service management for anyone who is new to the topic or to ITIL. Readers are welcome to use it as a reference guide that will support further study and practical application of ITIL.

Lastly, this book is supported by official ITIL Foundation training and certification and it may be used to prepare for the ITIL Foundation exam.

1.2.2 ITIL ecosystem

ITIL is more than a published body of knowledge. Organizations and people have been using the ITIL guidance for decades, and developed a large ecosystem including professional communities, specialized service providers, and technology solution vendors. To support these groups of stakeholders, PeopleCert has created and continually develops:

- **Members community:** uniting tens of thousands of professionals, this online community offers regular webinars and master-classes, tons of articles, case studies, and templates. A unique feature of the PeopleCert Plus Membership is access to the PeopleCert Library which offers the latest versions of the Official Practice Guides and many other publications, including current and previous official publications in many languages. Access to these resources allows members to participate in the ITIL Continuous Professional Development

(CPD) programme; the most efficient and flexible way to keep one's ITIL knowledge and certification up-to-date.
- **Partner programmes:** with over 2,500 partners worldwide, PeopleCert connects organizations with expertise, services, and tools to harness the value of ITIL. The partner network includes training providers, consulting firms, and tool vendors. Accredited Training Organizations (ATOs) deliver expert-led ITIL training, enabling corporate teams and individual professionals to gain in-depth knowledge, achieve certification, and apply ITIL to drive business success. Accredited Consulting Partners (ACPs) conduct ITIL maturity assessments and provide specialized guidance on the adoption of the ITIL framework and the implementation of organizational changes. Accredited Tool Vendors (ATVs) develop software solutions aligned with ITIL, helping organizations automate their processes. Together, this global network empowers organizations to enhance product and service management, streamline operations, and remain competitive in a rapidly evolving digital landscape.

The technology-enabled transformation of businesses and society in the first quarter of the twenty-first century has introduced new business and operating models based on digital technology. This evolution is reflected in the ITIL structure and contents. This edition of ITIL is primarily addressed to the following organizations:

- **Enterprises:** a loose term describing organizations of any size and structure, commercial or non-commercial, private or public, that use digital technology to enable and support their 'non-digital' business. For these organizations, management of digital technology is a supporting capability fulfilled by an internal or external team. In these organizations, the internal technology team is the main target audience of all ITIL Official Books but two; *ITIL Strategy* and *ITIL Transformation* are also intended for enterprise executives, defining how the organization uses digital technology and driving the digital transformation.
- **Managed service providers:** this is another wide group of organizations. Their common feature is that they manage digital products and services for other organizations, offering digital product and service management capabilities as-a-service. These organizations can also be of varying size and structure, from relatively small and specialized to multi-national and offering a wide variety of services.
- **Digital product organizations:** also a loose term. It applies to any organization that has made creating and offering digital products their key capability. It can be a small one-application startup offering their app to individual customers through a digital marketplace, or a large software vendor managing a portfolio of enterprise-level digital products.
- **Consultants:** organizations (from one to thousands of people) that help other organizations improve their digital product and service management.

An organization may belong to one or more of the groups described above and benefit from using ITIL in many ways.

1.2.3 Benefits of ITIL for enterprises

In enterprises, technology enables and supports the core business. This can occur at various levels, ranging from digital services that provide optional support, to deep integration of digital capabilities into the organization's business services offered to enterprise customers. Figure 1.2 shows how digital product and service management are positioned across the ITIL Official Books.

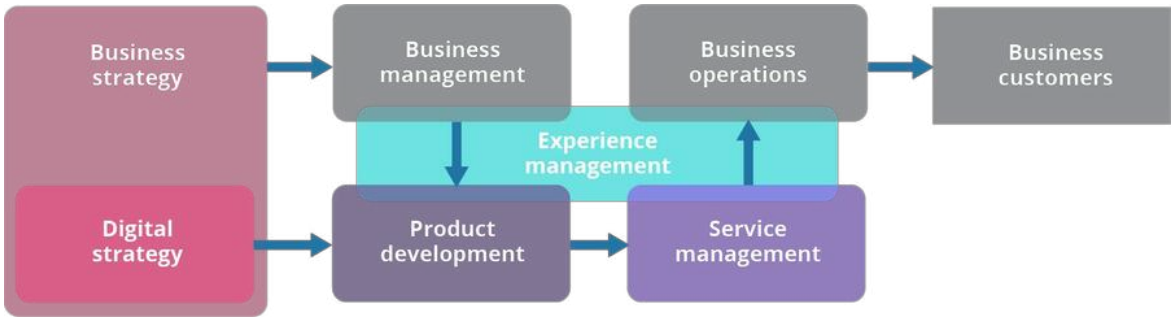


Figure 1.2 The role of digital product and service management and ITIL in enterprises

Benefits of using ITIL for these organizations include:

- The organization has an effective, adaptable, and sustainable digital strategy and successfully implements it.
- Management and use of digital technology are focused on creating value for the organization, its customers, and other stakeholders.
- Investments in technology support the digital strategy and the return on investment is clear.
- The organization quickly and effectively reacts to new business and technology challenges and opportunities.
- Balance between innovative adoption of emerging technologies, such as AI, and effective technology governance.
- End-to-end value-oriented management of work, optimized for value creation and elimination of waste.
- Holistic management of the ITIL Product and Service Lifecycle, close collaboration of teams involved in product and service management.
- Collaborative culture, ensuring safety, respect, and creativity.
- Effective and well-managed relationships with suppliers and partners.
- Adaptive and reliable operation in increasingly complex business and technology environment.
- Balance of control and flexibility in the changing business, technology, and regulatory context.
- Common language to describe digital product and service management within the organization and in communications with customers, partners, and suppliers.

1.2.4 Benefits of ITIL for managed service providers

Managed service providers delivering services to enterprises may be integrated into the enterprise's management system, either substituting for or complementing some or all of its product and service management capabilities, as shown in Figure 1.2. Managed service providers offering digital services to external customers may also substitute for or complement the management capabilities of a digital product vendor, as shown in Figure 1.3. Either way, the benefits of using ITIL for managed service providers include:

- The organization has an effective, adaptable, and sustainable service strategy and successfully implements it.
- Clear articulation of value of the services offered to customers, effective management of service portfolio.

- The organization quickly and effectively reacts to new business and technology challenges and opportunities.
- Balance of innovative adoption of emerging technologies, such as AI, and effective technology governance.
- End-to-end, value-oriented management of work, optimized for value creation and elimination of waste, and compatible with workflows of partners and customers.
- Clear roles and responsibilities in the holistic management of the ITIL Product and Service Lifecycle.
- Collaborative culture, ensuring safety, respect, and creativity.
- Effective and well-managed relationships with customers, suppliers and partners.
- Adaptive and reliable operation in increasingly complex business and technology environment.
- Balance of control and flexibility in the changing business, technology, and regulatory context.
- Common language to describe digital product and service management within the organization and in communications with customers, partners, and suppliers.

1.2.5 Benefits of ITIL for digital product vendors

Figure 1.3 shows how digital product and service management are positioned across the ITIL Official Books.

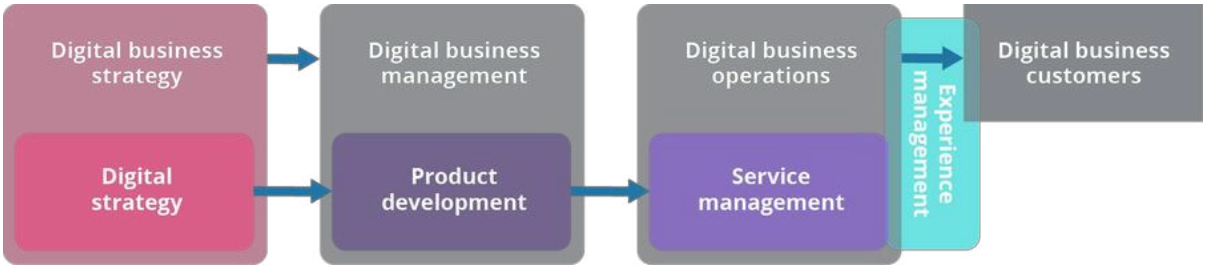


Figure 1.3 The role of digital product and service management and ITIL digital product vendors

Benefits of using ITIL for these organizations include:

- The organization has an effective, adaptable, and sustainable product strategy and successfully implements it.
- Product development and management are focused on creating value for the organization, its customers, and other stakeholders, avoiding the 'build trap'.
- The organization quickly and effectively reacts to new business and technology challenges and opportunities.
- Balance between innovative adoption of emerging technologies, such as AI, and effective technology governance.
- End-to-end, value-oriented management of work, optimized for value creation and elimination of waste
- Holistic management of the ITIL Product and Service Lifecycle, close collaboration of internal and external teams involved in product and service management.
- Collaborative culture ensuring safety, respect, and creativity.
- Development techniques and tools are integrated in a holistic management system and used with optimal effectiveness and adaptability.
- Effective and well-managed relationships with customers, suppliers and partners.
- Adaptive and reliable operation in increasingly complex business and technology environment.

- Balance of control and flexibility in the changing business, technology, and regulatory context.
- Common language to describe digital product and service management within the organization and in communications with customers, partners, and suppliers.

1.2.6 Benefits of ITIL for digital product and service management professionals

If an organization uses ITIL and provides employees with access to the ITIL body of knowledge and training, professionals involved in management of digital products and services may experience the following benefits:

- Good understanding of the team's and individual's role in creating value for internal and external customers and other stakeholders.
- Collaborative culture ensuring safety, respect, and creativity.
- Understanding of business and customer context for the technical competencies and activities.
- Common language to describe product and service management within the organization and in communications with customers, partners, and suppliers.
- Access to structured and practical guidance relevant to the individual's, team's, and organization's context.
- Adaptability to new business, technology, and organizational trends.
- A big picture of product and service management, providing context for other management and technical frameworks, methods, and techniques.
- Clear paths for professional development.
- Globally recognized professional certifications and designations.

Some of these benefits can be achieved through the study of ITIL, access to the body of knowledge, and limited application of the ITIL practices within one's workplace. Other benefits are only achievable if the organization adopts ITIL recommendations and successfully develops an open, effective, adaptive, and sustainable digital governance and management system. It is never enough to just obtain the theoretical knowledge and pass the exam. ITIL is designed to support the ongoing development and improvement of people's competencies and organization's capabilities, and reading the books is not enough. However, it is a good first step towards better management and use of digital technology, and we hope you will enjoy the journey.

1.3 Key concepts of ITIL: An Introduction

This Official Book describes the key concepts and models of ITIL. IT services as a foundation for all other ITIL publications and related materials; training, exams, tools and techniques. This chapter makes a quick introduction to the concepts and models described in the following chapters.

To support a holistic approach to digital product and service management, ITIL defines four dimensions that collectively are critical to the effective and efficient facilitation of value for customers and other stakeholders in the form of products and services. These are:

- organizations and people
- information and technology
- partners and suppliers
- value streams and processes.

The ITIL Four Dimensions are described and explained in Chapter 2.

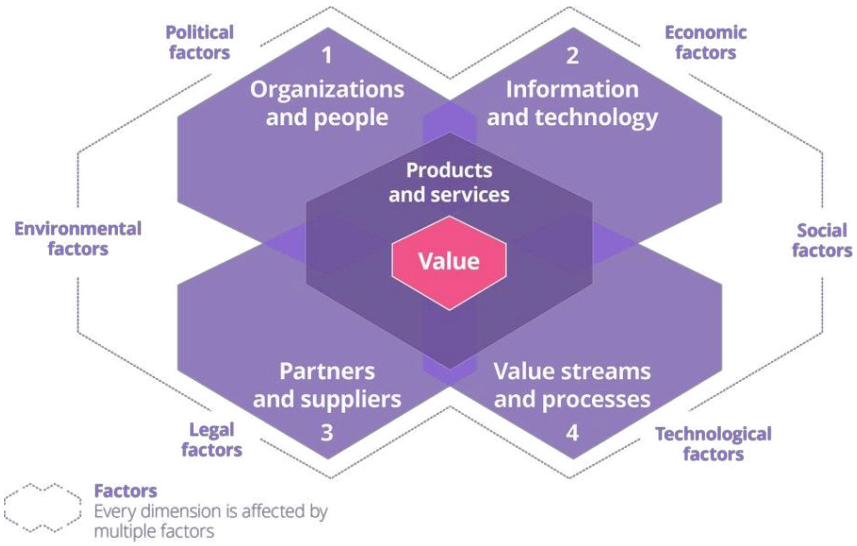


Figure 1.4 The ITIL Four Dimensions of Product and Service Management

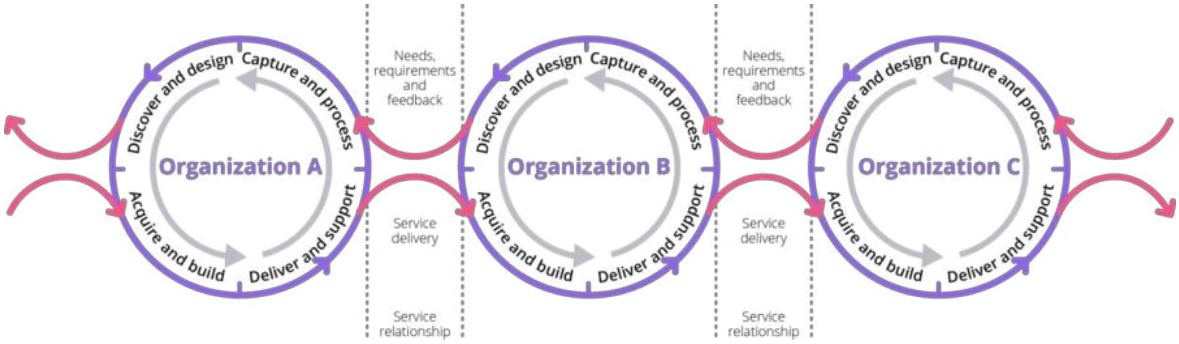


Figure 1.5 The ITIL Service Relationship Model

To ensure quality and continual improvement of digital products and services, organizations have to manage products and services throughout their lifecycle. Chapter 4 introduces the ITIL Product and Service Lifecycle Model (ITIL PSLM) and describes management activities performed by organizations at every step of the lifecycle.

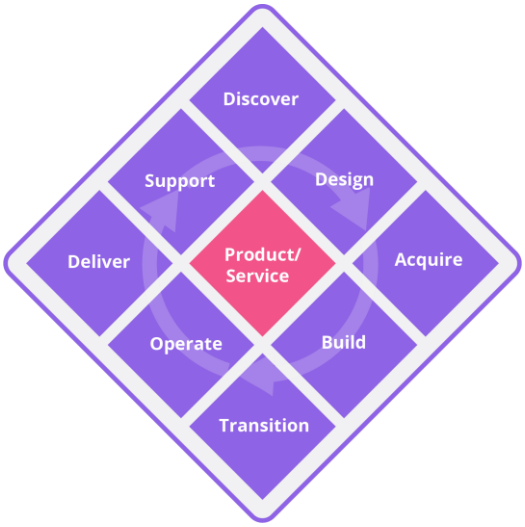


Figure 1.6 The ITIL Product and Service Lifecycle Model

To assure stakeholders that management of digital products and services is effective, efficient, sustainable, and aligned with requirements and regulations, organizations develop and maintain a governance and management system. ITIL combines governance and management of digital technology in one system called the ITIL Value System (ITIL VS).

The ITIL VS includes five components:

- Guiding principles
- Governance
- Value chain
- Practices
- Continual improvement

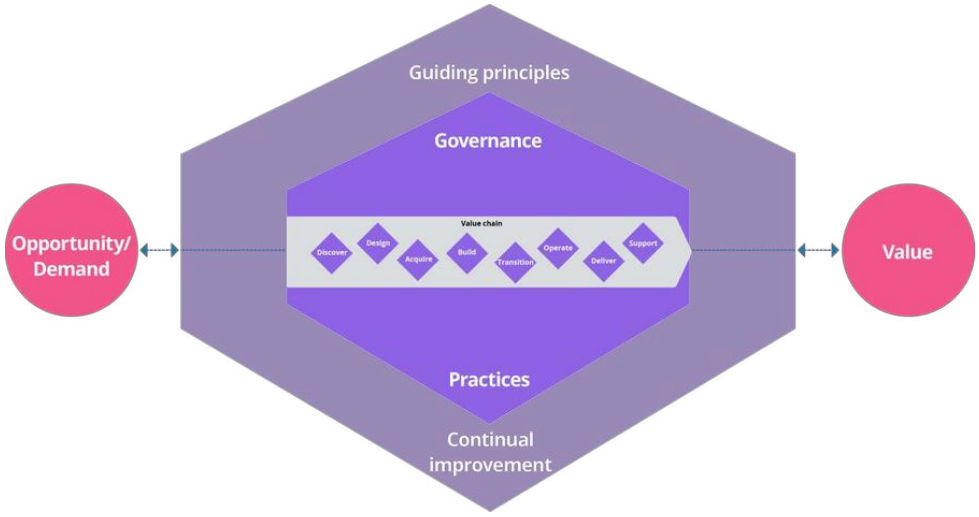


Figure 1.7 The ITIL Value System (ITIL VS)

The ITIL Guiding Principles support an organization in all circumstances, regardless of changes in its goals, strategies, type of work, or management structure. They also guide the ITIL development team in the continual development of the ITIL guidance.



Figure 1.8 The ITIL Guiding Principles

The ITIL Guiding Principles and other components of the ITIL VS are described in Chapter 5. The central component of the ITIL VS is organization's value chain: a set of high-level activities performed by the organization to manage the lifecycle of digital product and services and enable value for service consumers.

The value chain activities are enabled and supported by management practices. Each practice combines resources from the Four Dimensions to enable an organization's ability to manage specific aspects of digital products and services, as well as the organization in general, from high-level architecture and strategy to service availability and incident resolution. Details of each management practice are described in the Official Practice Guides, but this book provides enough information for the first introduction. Section 5.5 describes and explains the structure of the Official Practice Guides: Appendix A provides one-page quick reference guides for all 34 practices; Appendix B shows how practices enable and support each of the eight value chain activities.

All organizations are not the same. They play many roles in service relationships and manage digital products and services of different architecture. The product and service management

activities described by the Lifecycle Model are performed in various combinations defined by the organization's context. To understand the actual product and service management work as performed (rather than as designed or described in a universal model), organizations need to identify and map their value streams, then analyse and continually improve them. Chapter 6 introduces the concepts of value stream identification, mapping, and management.

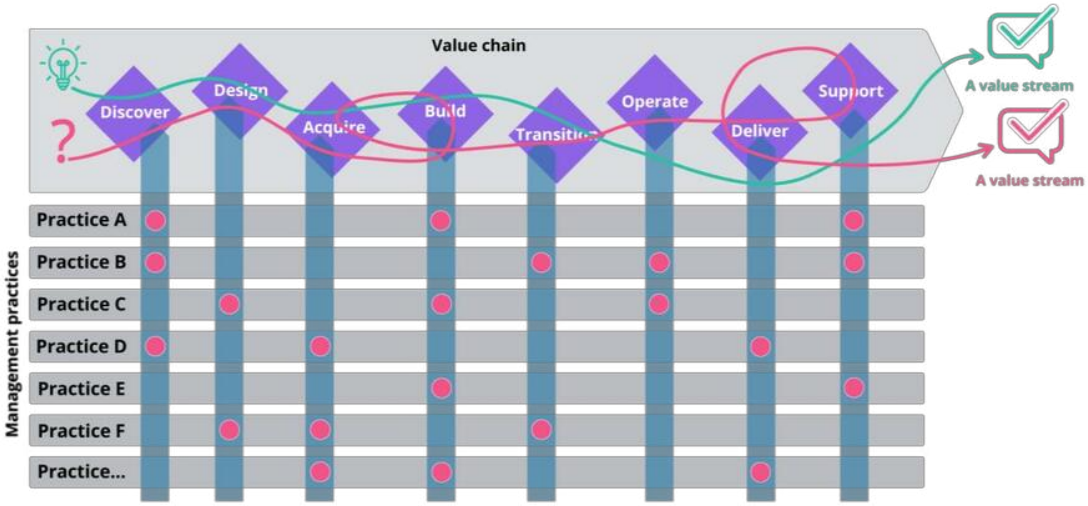
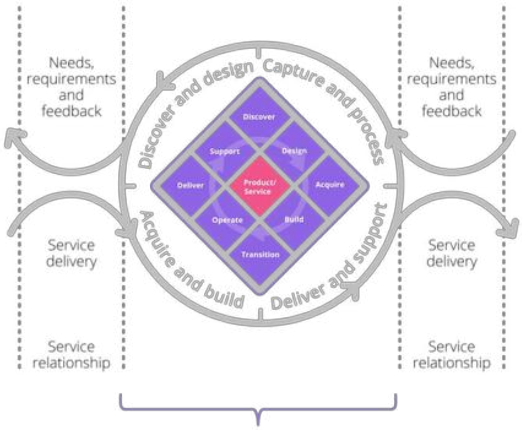


Figure 1.9 Management practices enable and support the value chain activities

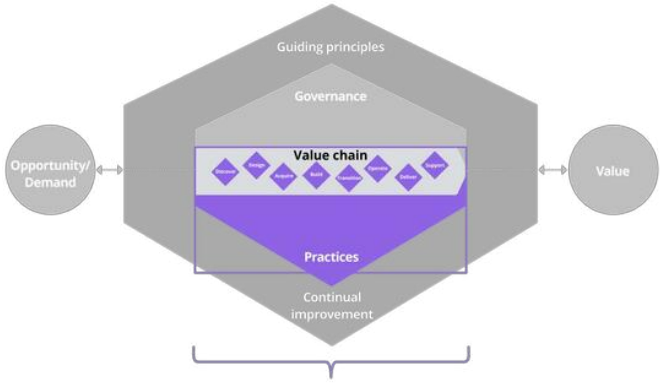
Together, Chapters 3-6 of this book introduce readers to digital product and service management and provide a solid foundation to the next steps in your professional development. Chapter 7 describes how these next steps can be made, depending on your role and professional goals.



1. All organizations are engaged in **service relationships**.

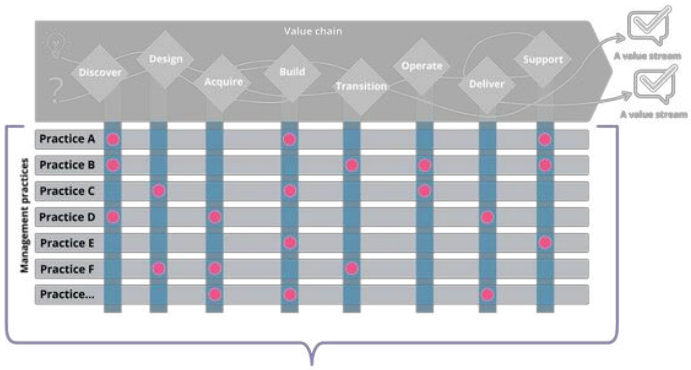


2. In service relationships, every organization takes responsibility for all or some stages of **the product and service lifecycle**.

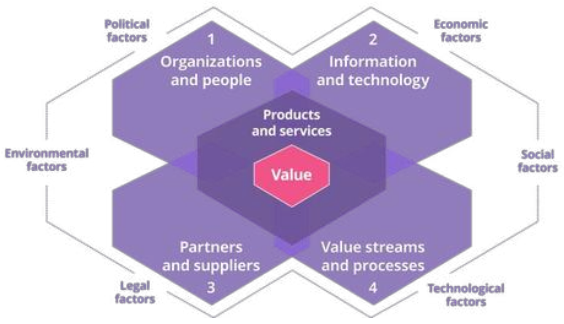


3. Each organization has a **value system** enabling value co-creation.

4. The central component of the value system is a **value chain**: activities the organization performs to manage products and services.



5. The value chain is enabled and supported by the **management practices**.



6. The management practices combine **resources of the four dimensions** to create management capabilities.

Figure 1.10 The key models of ITIL (Version 5): the big picture

1.4 Official Book structure

- **Chapter 1:** introduces ITIL and the transition from ITSM to DPSM in the modern world of service management. The ITIL qualification scheme, higher levels, practices as well as the ecosystem are also presented here. The benefits for all of the personas addressed in this book are also listed in this chapter. The example scenarios are also included here.
- **Chapter 2:** provides an overview of the ITIL Four Dimensions of Product and Service Management.
- **Chapter 3:** explores the key concepts of digital product and service management.
- **Chapter 4:** describes the digital product and service management activities.
- **Chapter 5:** details the ITIL Value System including the guiding principles, governance, the value chain, practices, and continual improvement.
- **Chapter 6:** provides guidance on the practical use of the ITIL concepts and models for improvement of an organization's governance and management system.
- **Chapter 7:** suggests next steps after ITIL Foundation, including the higher levels of ITIL, other frameworks like DevOps and PRINCE2, and PeopleCert Plus Membership.

The six available **Appendices** provide additional guidance, and include:

- **Appendix A:** provides a one-page summary of each of the ITIL practices.
- **Appendix B:** maps the 34 management practices to the value chain activities.
- **Appendix C:** provides a summary of ITIL roles.
- **Appendix D:** provides a summary of the automation tools used for product and service management.
- **Appendix E:** briefly describes the steps of value stream mapping.
- **Appendix F:** introduces the ITIL Maturity Model.
- **Appendix G:** introduces the ITIL Transformation Model

At the end of this Official Book you will also find the:

- **Footnotes:** provide additional information, references, or explanations for all the citations in this book.
- **Glossary:** provides definitions of the key terms that are used throughout the Official Book.
- **Bibliography:** provides a list of sources (books, articles, websites, and more) consulted or cited in this book to give credit to authors and allow readers to find the original material.
- **Index:** provides an alphabetical list of topics, names, or key terms included in this book so that readers can quickly locate specific information.

1.5 The ITIL Car Rental Scenario



Throughout this publication, ITIL concepts are illustrated with a fictitious yet realistic scenario. This scenario is recommended to readers, as well as trainers and students of the ITIL Foundation courses to discuss, model, and adapt ITIL to one's own work situation. However, the scenario is not used in the ITIL Foundation exam and should not be treated as exam preparation material. Nor should it be treated as a source of the right and universally applicable solutions: first, the ITIL Car Rental team makes mistakes too; second, no 'right and universally applicable solution' exists. Readers will have to adopt ITIL recommendations to their own unique and ever-changing contexts.

Introduction to ITIL Car Rental



Ten years ago, ITIL Car Rental (ICR) was launched in Seattle with the aim to provide convenient and affordable rental cars to customers around the world. After a relatively short time, ICR became a globally recognized company, with a wide network of franchising partners across Europe, the US, and Asia-Pacific, with approximately 400 direct employees. In the first few years of operation, repeat business accounted for nearly a third of all reservations. Shareholders saw steady growth, and the company earned a reputation for putting customers first. ICR quickly became a model of modern mobility: fast, reliable, and profitable. Following its early success, the company expanded through mergers and acquisitions to new markets and new services, including car sharing.

ICR relies heavily on digital technology for internal operations and service delivery, using a mix of internal and external digital products. Customer-facing mobile applications are developed and run by the internal IT team. AI is increasingly used in internal and external products and services for predictive maintenance, customer support, scheduling, smart check-in and return processes, and so on.

As new competitors, such as car-sharing services, rideshare apps, and driverless cars, enter the market, customers now expect a seamless digital experience: quick bookings, app-based help, and flexible options that fit easily into their daily lives. At the same time, customers are paying more attention to companies that value social responsibility, sustainability, and environmental consciousness. These expectations are driving ICR to set clear and ambitious sustainability goals, as well as pursue further growth.

The board members strongly believe that the company's success in the years to come will be defined by innovation and the use of digital technology. For this reason, they appointed a new CIO, Max. Max was chosen for his experience in digitalization and his track record in successful, large-scale IT transformations.

Max's strong background in ITIL and ITSM indicates that he values ITIL certification, and his hiring policy reflects this. Having worked with Design Thinking, DevOps, and agile methods, he believes sustainable business requires a blended approach to digital product and service management. Max is keen to see how his team can redefine the car rental experience and ensure that ICR is the first choice for new and existing customers.

Meet the employees of ITIL Car Rental:



Max, Chief Information Officer (CIO)

Max is the new CIO. He is an experienced executive with a track record of leading digital transformations. He believes in an integrated approach to DPSM.



Anna, Product Manager

Anna has been with ITIL Car Rental for five years. She focuses on commercial success and continual B2C development. She is detail-oriented, eco-conscious, and dedicated to improving overall customer experience.



Maria, Business Analyst

Maria is a proactive communicator who ensures smooth collaboration between IT and business teams. She works mostly on discovery and planning activities, supporting continual improvement of the company's digital products. She asks a lot of questions and is great at spotting patterns and trends.



Omar, IT Delivery Manager

Omar manages ongoing service delivery. He applies ITIL practices to improve efficiency and customer satisfaction. However, Omar has had little experience with a blended or collaborative approach to product and service management.



Sam, Head of Product Development

Sam has more than 10 years of experience in leading cross-functional product teams in the domains of mobility and automotive innovation. He oversees the entire product lifecycle at ITIL Car Rental from strategic vision to delivery and ensures that customer needs, market trends, and sustainability are all in sync.



Alex, Enterprise Architect

Alex is responsible for ensuring that product design and technological strategy are aligned, sustainable, and future-proof. She provides architectural guidance across teams, works to identify systemic risks, and holds coherence in a fast-changing digital ecosystem. She is highly analytical with a strong intuition for patterns and risks.

The CIO's vision for ITIL Car Rental



Max: We live in an era of rapid change, where all companies are going through some kind of digital transformation. Service expectations have changed drastically since ITIL Car Rental was created 10 years ago. Customers want seamless and immediate access to rental services from their smartphones, as well as innovation as part of their daily lives. Autonomous vehicles are the future; they will make car rental companies stand out and continue successfully. My vision is for ITIL Car Rental to pioneer this transformation and become the go-to name for car rentals worldwide. We will continue offering outstanding customer service while maintaining competitive car rental rates. After all, ITIL Car Rental is more than just a service. We are here to enhance the entire travel experience.

CHAPTER 2
THE ITIL FOUR DIMENSIONS OF PRODUCT AND SERVICE MANAGEMENT

2.1 Introduction

To achieve their desired outcomes and work as effectively as possible, organizations should consider all types of resources and aspects of behaviour. For example, process improvements should be planned with proper consideration for the people, partners, and technology involved. Technology solutions should be implemented with due care for the processes and people they are supposed to support. There are multiple aspects to product and service management, but none of them is sufficient to enable the required outcomes when considered in isolation.

To support a holistic approach to product and service management, ITIL defines four dimensions that are collectively critical to the effective and efficient facilitation of value for customers and other stakeholders in the form of products and services. These are:

- organizations and people
- information and technology
- partners and suppliers
- value streams and processes.

These dimensions represent perspectives which are relevant to all levels, including individual product design, management practices, and the organization's value system as a whole.

The ITIL Four Dimensions are represented in Figure 1.4

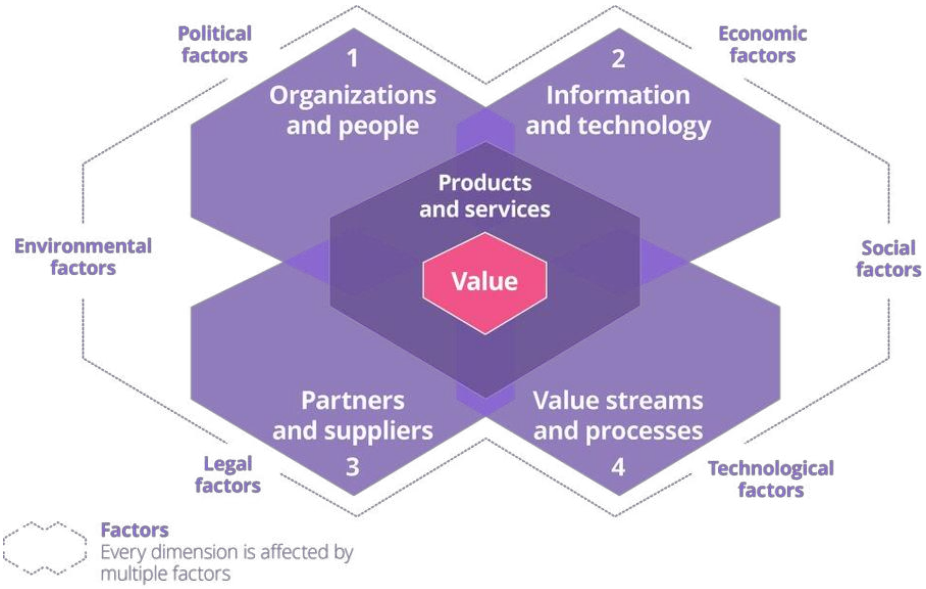


Figure 1.4 The ITIL Four Dimensions of Product and Service Management

The Four Dimensions are constrained or influenced by several external factors that are often beyond the control of the organization. In Figure 1.4, these factors are illustrated in line with one of the widely accepted models known as PESTLE (Political, Economic, Social, Technology, Legal, Environmental). Other similar models can be adopted by organizations. The Four Dimensions and external factors should be considered holistically and collectively, in no specific order or hierarchy.

ITIL Car Rental | The ITIL Four Dimensions of Product and Service Management



Max: As an IT team, we are responsible for information and technology at ITIL Car Rental. However, effective IT management is much more than just managing technology. We must also consider the wider organization and people involved in ITIL Car Rental service, our relationships with partners and suppliers, and the value streams, processes, and technologies that we use.

2.2 Organizations and people

The complexity of organizations is growing, and it is important to ensure that the way an organization is structured and managed, as well as its roles, responsibilities, and systems of authority and communication, are well defined and support its overall strategy and operating model.

The effectiveness of an organization cannot be assured by a formally established structure or system of authority alone. The organization also needs a culture that supports its objectives, along with the right level of capacity and competency within its workforce. It is vital that the leaders of the organization champion and advocate values that motivate people to work in desirable ways. Ultimately, however, it is how an organization carries out its work that shapes the shared values and attitudes that, over time, become its culture. Organizational culture is an important part of an organization's identity, image, and eventual success or failure.

2.2.1 Culture

Culture
A set of values shared by a group of people, expressed through people's behaviour and their ideas, beliefs, and practices.

In increasingly complex business and social environments, organizations that aim to be innovative and effective should foster work cultures that encourage members to contribute to something worthwhile, to learn and improve, to trust and be trusted, and to be recognized for their intent and effort.

Digitally enabled organizations are under pressure to continually improve their performance under changing market conditions. Technological progress means that their products have an increasingly significant economic, societal, and political impact. Therefore, organizational failure can often lead to disastrous consequences. The challenge for these organizations is to foster an effective set of shared beliefs, perceptions, and values in relation to risks. This, in turn, should create a safety culture, and result in behaviour that is beneficial for all stakeholders, including the members of the organization.

Safety culture
An organizational culture in which people are comfortable being (and expressing) themselves.

In a safety culture, people feel trusted and valued. They are, therefore, more likely to point out risks than when they fear that this would damage their reputation and position. A safety culture can be promoted by the commitment of senior management to psychological safety, realistic

practices for handling risks and issues, continual organizational learning, and care and concern for risks shared across the workforce.



When applying safety culture, organizations should encourage the following behaviours:
Act on safety requirements: do not just talk about why safety is important; do something about it.
Exhibit vulnerability: do not be afraid to speak up about any doubts and ask for help when needed.
Foster feedback: seek out input and act on it.
Be kind and compassionate: build human relationships.
Be realistic about failure: acknowledge that failures will happen and treat them as learning opportunities, with no blame.

2.2.2 Leadership

Leaders at all levels of an organization play a critical role in shaping and maintaining the organizational culture.

Effective leaders:

- engage, inspire, and motivate people by behaving with integrity to generate respect and empower employees
- focus on value by being prepared to adjust priorities and stay aligned with the overall vision
- create a healthy culture by consistently following and demonstrating the organization's values
- create and communicate a clear vision
- show a commitment to knowledge and continual learning.

Good leadership balances the global good with individual self-interest. This is leadership guided by a vision and driven by values that target not only the success of the organization but also the well-being of all stakeholders, including employees, customers, investors, partners, society, and the environment. Conscious[2] leaders speak with integrity, lead with authenticity, and hold themselves accountable. They listen with the intent to understand and not just to respond, and they achieve this by being in tune with themselves and the world around them.

2.2.3 Organizational structure

There are many organizational forms that are designed to optimize how people are positioned and managed to ensure optimal performance and strategic alignment.

There are different ways to categorize organizational structure. Examples include:

- geography and location (centralized or distributed)
- governance drivers (hierarchical, community-based, market-like)
- scope of work and responsibility (functional, product or service-based, project-focused, and others).

Regardless of the type, an organizational structure typically encompasses:

- chain of command
- roles and responsibilities
- scope of control
- decision-making authorities
- departments or teams within the organization.

The organizational structure is a part of business architecture; it should enable fulfilment of an organization's vision and be aligned with strategic goals. It is important that the organizational structure is not the only consideration of organizational design, and that the structure of an organization helps improve how the organization delivers products and services to consumers.

Organizations focused on digital products and services should be aware of the relationship between organizational design and digital product architecture. This relationship is known as Conway's Law. Named after Melvin E. Conway, who introduced the concept in 1967, the law states:



> Organizations which design systems [...] are constrained to produce designs which are copies of the communication structures of these organizations."[3]
> Conway's Law

In other words, digital product architecture often reflects how the teams involved in product development are organized and communicate. The impact of organizational design on product architecture and performance is manifold and includes the following:

- Product design solutions tend to mirror the organizational design.
- The speed of product discovery, design, build, and transition is constrained by the number and complexity of the communications between teams.

Some organizations apply the so-called reverse Conway approach and design their teams' structure to enable the target product architecture. Target product architecture moves from large-scale, complicated, centralized software solutions to smaller, independently evolving solutions connected by standard interfaces. As a response to this, organizations change their teams' structure and cooperation. Many organizations adopt product-based structure, with small (up to 10 members) teams involving people with business, product, service, and technology competencies. Each multi-disciplinary team is responsible for the full lifecycle of the digital product and service. This allows to increase the speed of workflow, optimize communications, and improve product and service quality. Product teams should have access to the specialist expertise they need (for example, legal, policy, or industry-specific). As a rule, well-defined execution work should be performed within a product team, while more uncertain work requiring diverse expertise should be supported by collaboration between teams. This approach facilitates improvements in time-to-market, product autonomy, and adaptability. It also enables agile ways of working and helps to optimize risks and costs.

2.2.4 Skills and competencies

To create and manage products and services that meet evolving needs of service consumers and leverage the latest technology capabilities, organizations should identify, acquire, develop, and continually improve competencies of their people and teams.

This includes technical expertise as well as universal skills, which depend on the individual's role, such as:

- **Creativity:** the ability to think innovatively and develop novel solutions or ideas.
- **Attention to detail:** being thorough and accurate in carrying out tasks.
- **Problem-solving:** this includes the ability to analyse situations, apply logical reasoning, brainstorm solutions, make decisions, and think creatively to overcome obstacles.
- **Critical thinking:** this involves analysing information objectively, logical reasoning, observation, and questioning assumptions.

- **Teamwork/collaboration:** this involves working effectively with others, coordinating tasks, managing conflict within a group, sharing ideas, and respecting diverse opinions.
- **Interpersonal skills:** these relate to building relationships, empathy, networking, diplomacy, and effective social interaction.
- **Work ethic:** this covers traits like responsibility, discipline, commitment, punctuality, and professionalism.
- **Emotional intelligence:** often encompassing self-awareness, empathy, and managing relationships effectively.
- **Communication:** this encompasses verbal and written communication, active listening, presentation skills, negotiation, and providing constructive feedback.
- **Adaptability/flexibility:** this refers to the capacity to embrace and adjust to change, self-manage, and learn new things.
- **Time management:** this involves skills like prioritizing tasks, planning, meeting deadlines, and organizing work effectively.
- **Leadership:** this includes motivating others, delegating tasks effectively, mentoring colleagues, and making sound decisions.
- **Stress management:** the ability to remain calm and effective under pressure.

Organizations identify the relevant competencies based on the organizational culture and agreed objectives and responsibilities of the teams and people. Industry-specific competence models such as e-CF[4] and SFIA®[5] support the understanding and planning of professional competencies.

2.2.5 Organizations, people and AI

Organizations are actively adopting AI tools for various reasons, from creating competitive advantages to optimizing operations. AI offers many attractive opportunities, but they come with risks, sometimes unknown. In many cases, AI tools are adopted for critical decision-making, such as recruiting, without due care and control. Organizations should balance speed of adopting AI with effective governance. ITIL provides a practical guidance on effective AI governance in a specialized publication supported by official training and certification.

Humans excel in creativity, empathy, and contextual understanding, but some tasks within product and service management are cumbersome, repetitive, and follow well-known patterns. This is where AI can help:

- **Information processing:** AI efficiently processes vast amounts of data, accelerating tasks that would otherwise require extensive human effort.
- **Pattern recognition:** AI consistently identifies subtle patterns and trends within large datasets, aiding activities such as demand forecasting, incident detection, or predictive analysis of system performance.
- **Reducing cognitive bias:** AI can help ensure decisions are made objectively, minimizing biases and promoting fairness in areas such as capacity planning, hiring decisions, or prioritization of improvement initiatives.

Data analytics can enhance understanding of stakeholder perceptions, assess performance and productivity of teams, products and services, and highlight risks within supplier relationships. Furthermore, analytics can support strategic decision-making by identifying products, services or practices in need of increased management attention. Data analytics achieves this by detecting areas prone to deviations from the intended behaviour and recognizing the impact of broader socio-economic or environmental trends on the organization.

AI is increasingly becoming a collaborative partner, enhancing human capabilities and compensating for their limitations. As organizations navigate these technological advancements, the future lies in synergizing human expertise and AI capabilities. AI can support or take over repetitive, data-intensive tasks, enabling people to focus on strategic and inherently human activities such as stakeholder engagement, relationship building, and continual improvement.

Organizations should establish a safe and collaborative culture, enabled and supported by effective and conscious leadership. People working in an organization should have sufficient knowledge and skills supporting the current and anticipated needs of the organization. Organizational structure should enable and support an organization's culture and strategy. In organizations creating and delivering digital products and services, team structure should be optimized for the target product architecture.

ITIL Car Rental | Organization and People



Max: We have decided to revisit our organizational structure. We have several key products for both internal and external customers and we have made the decision to establish dedicated product teams to work on these offerings continuously. We understand that every product needs ongoing development and requires the right guidance and expertise, which is why we form permanent, product-focused teams.

2.3 Value streams and processes

The 'value streams and processes' dimension addresses organizational and cross-organizational workflows, focusing on what activities the organization undertakes and how they are organized to enable value for stakeholders effectively and efficiently.

2.3.1 Workflows in ITIL

ITIL describes organizational workflows for creation and management of digital products and services at several levels:

- Management practices level workflows
- Value chain level workflows.

These are described below and shown in Figure 2.1.

Management practice level: each management practice includes several processes.

Process
A set of interrelated or interacting activities that transform inputs into outputs. Processes define the sequence of activities and their dependencies.

These processes are described in the ITIL Official Practice Guides available in the Membership Library. Introduction to the ITIL management practices and practice guides is provided in Section 5.5. One-page summaries of the ITIL management practices are provided in Appendix A.

Management practices support the value chain activities described in Chapter 4 (see Appendix B for detailed mapping of their relationships).

Value chain activities
Value chain activities are activities performed by organizations to manage digital products and services through their lifecycle. Each of these activities is enabled and supported by several management practices.

Organizations create operating models that include some or all product and service lifecycle activities. These activities form the organization's value chain.

Each of the eight value chain activities has a simple workflow described in Chapter 4.

Value chain
Value chain is an entire set of activities that enables value through the provision of a product or service.

In real-life work, organizations perform combinations of the lifecycle activities to enable or restore value for service consumers and other stakeholders. These combinations are organization- and context-specific. They are the organization's value streams.

Value stream
Value stream is a series of steps that an organization uses to create and deliver products and services to a service consumer.

Unlike processes, lifecycle activities, and value chain models that describe 'workflows as designed', value streams represent the actual sequence of activities 'as performed'. Apart from the flow of work, value streams represent a flow of information and artifacts enabling creation of value. Value streams can and should mapped, analysed, and optimized, and patterns of value streams can be identified and documented, but actual flow of activities (and related information and artifacts) will always be context-specific and somewhat different from the identified pattern. Mapping and analysis of value streams is therefore a continual activity, rather than a one-off project. An introduction to value stream mapping and management is provided in Chapter 6 and Appendix E.

Figure 2.1 shows the relationships between management practices, the product and service management activities, value chain, and value streams. Each management practice includes several processes.

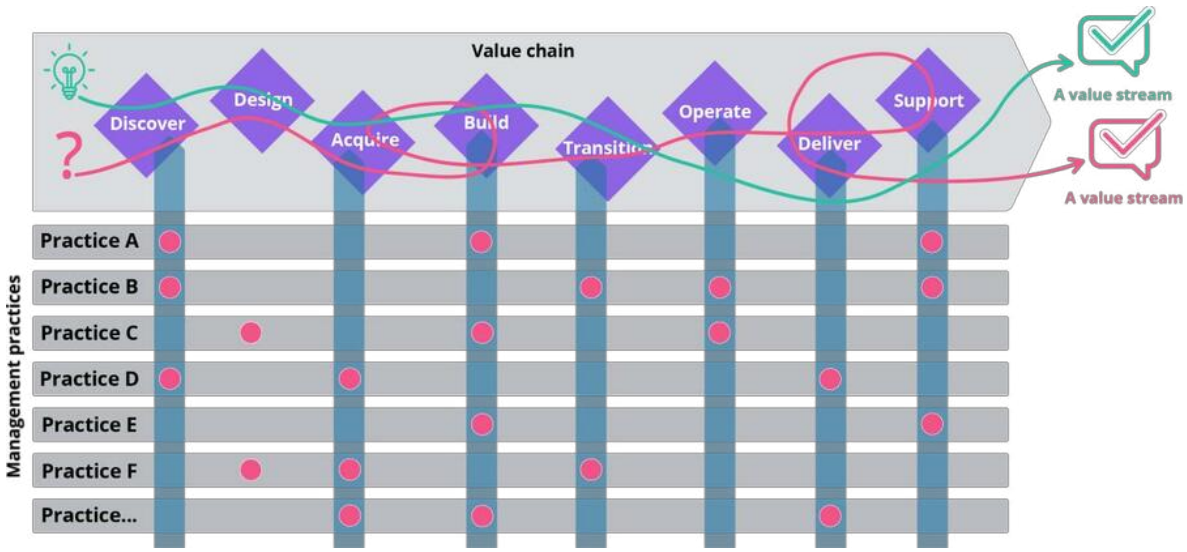


Figure 1.9 Management practices enable and support the value chain activities

Organizations develop management systems to organize, coordinate, and control flows of work, information, and artifacts. When designing these systems, organizations define how the work should be performed and transferred. Real-life workflows always deviate to some extent from their original design. Designed workflows act as constraints, enabling and governing the actual workflow. These constraints should be relevant to the organization's context and optimized for complexity.

2.3.2 Optimizing workflows for complexity

Organizations often develop detailed procedures describing how activities should be performed, by whom, and with which tools. Such procedures may be effective and ensure consistent outputs, but only in a highly predictable, stable, and well-understood situation. They may be less effective, useless, or even harmful in situations different from the ones they were designed for. This issue is increasingly important as the level of situational complexity, and its variability, has been growing fast in the last decades.

Complexity thinking
Complexity thinking is an approach to analysis and decision-making based on the recognition and understanding of the various levels of complexity inherent in the systems and the context in which they operate.

Most organizations will experience a variety of work contexts, some being more predictable than others. It is therefore important to understand the nature of the work being executed and to act accordingly. Different situations require different strategies. This may seem obvious, but is often overlooked in practice. Many organizations fall into the trap of applying the same methods to every challenge they face, regardless of context.

The contexts and situations in which organizations and teams find themselves can be broadly categorized based on their predictability and the relationship between cause and effect. Sometimes organizational systems behave in predictable ways, where specific actions reliably produce expected outcomes. Other situations are unpredictable, with actions leading to unexpected results that can only be understood in hindsight.

In ITIL, contextual variations are described as four broad categories: **ordered, complex, chaotic, and confused**.

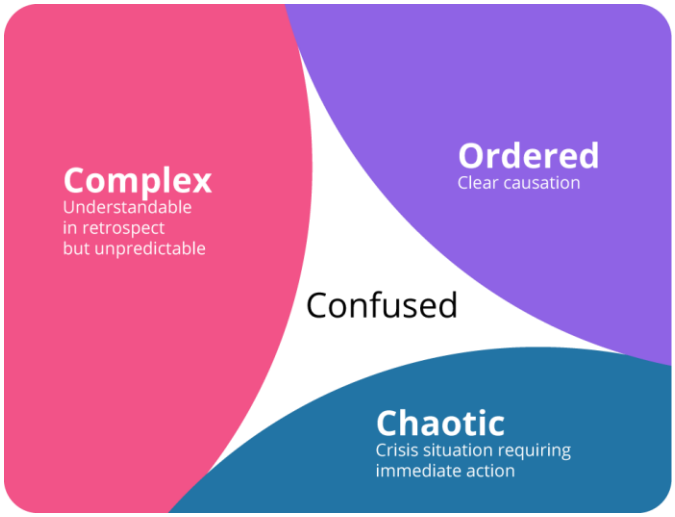


Figure 2.1 Four types of complexity context

In ordered contexts, cause-and-effect relationships are known or knowable. Think about baking a cake; follow the recipe correctly, and the outcome is predictable. Many traditional business processes work this way, where established procedures reliably produce expected results when followed properly.

Complex contexts are fundamentally different. Here, cause-and-effect relationships can only be understood in retrospect. Think about raising a child; the same parenting approach might work differently with different children or even with the same child at different times. No amount of planning can perfectly predict outcomes. Many complex systems like societal structures, market dynamics, and cultural factors fit within this category, however, not every aspect within these systems is necessarily complex. For example, an organization is always a complex (adaptive) system. However, a well-planned project to deliver expected outputs based on previous experience with the same work can be predictable to a very high degree, thus placing the project itself into an ordered context.

Chaotic contexts represent crisis situations requiring immediate action. Think about a fire in a building; the priority is getting people to safety immediately, not conducting a detailed analysis of fire patterns. The relationship between actions and outcomes is turbulent and unpredictable in a chaotic context.

A confused context represents the starting point at which the nature of a system is not yet understood. This is where an organization or team needs to figure out the possible context and the next steps to be taken. This distinction is important, because approaches that work perfectly in one context often fail in another. Detailed planning processes that succeed in ordered contexts become paralysis in chaotic situations. Similarly, the experimental approaches needed in complex environments might seem inefficient in ordered environments.

The recognition of complexity, and therefore unpredictability, as a valid condition challenges product and service management practitioners to reconsider their belief that rigid processes and plans are the only correct responses to all circumstances.

This means that the processes provided by ITIL in the Official Practice Guides and the value chain activity workflows described in Chapter 4 should **not** be directly copied and pasted in an organization. Instead, they should be adopted and adapted for the organization's context. Keep in mind that an organization's processes should be designed for agility and situational adjustment. While high-level guidance is essential for the execution of product and service management activities, there should also be room for ad-hoc corrections and deviations.

Example

Consider the following analogy: when a car driver uses a satellite navigation system to get from point A to point B, both the navigation system and the driver's behaviour are constrained by roads available and the local traffic code, that is, policies and external circumstances. A route suggested by the navigation system based on the available data and driver's requirements is similar to a pre-defined process which the driver will follow in a normal situation. However, it may be re-planned if the system receives new information, for example, about traffic conditions and road closures. But even with the most up-to-date data available to the system, the driver still needs to manoeuvre, change speed, and sometimes deviate from the route in response to the road surface, weather conditions, vehicle status, and other live conditions that the process could not be designed or adjusted for. Digital technology enables modern navigation systems to use increasing amount of data and get closer and closer to becoming intelligent autopilots. Similarly, business intelligence systems and AI-enabled co-pilots are getting better at supporting (or even performing) situational orientation. With or without such assistance, strictly pre-defined detailed processes and procedures are increasingly inapplicable to the constantly growing variety of work scenarios and tend to remain a theoretical image of a workflow, rather than an actionable guidance. The solution to this challenge is to design processes as high-level course of action and allow people to make decisions within it. Detailed procedures should be identified and documented only for repeatable, standardised activities; these procedures should allow for reasonable deviations and should be subject to continual review and updates.



Organizations should embrace the varying complexity of the work contexts and develop the ability to respond according to the specific circumstances. Applicability and effectiveness of different ways of making decisions and taking actions vary depending on the complexity of the situation in which people, teams, and organizations find themselves.

ITIL Car Rental | Value streams and processes



Maria: We have well-defined processes in every part of the company, which are followed by most teams at most times. However, in the last few months, we have had coordination issues between the booking department and the team responsible for cleaning the vehicles. There were quite a few cases where customers did not receive a clean, ready car on time, which resulted in additional waiting time. Both teams were doing well individually, but together, things did not run smoothly. That was when we realized we needed better coordination and decided to try value stream mapping. Now we analyse, model, and improve the full end-to-end workflows, from the moment a customer shows interest in our app to the moment they step out of the car, focusing on customer experience and value.



Anna: And this works! We identified bottlenecks, some related to digital products, some to work processes, and managed to significantly improve the workflow. More importantly, value stream mapping helped us improve our services for customers! By understanding how work and information flow through multiple teams, we have made our services better. It came as a surprise to me; I used to think that value stream mapping was only about efficiency, but it actually helps to create value, not just eliminate waste!

2.4 Information and technology

The 'information and technology' dimension addresses data, information, and technologies used in digital products and services, as well as those used as part of the organization's product and service management systems.

2.4.1 Technology

The technologies that support product and service management include, but are not limited to, workflow management systems, knowledge bases, inventory systems, communication systems, and analytical tools. Product and service management increasingly benefit from developments in technology. Artificial Intelligence (AI), machine learning, and other cognitive computing solutions are used at all levels, from strategic planning and portfolio optimization to software development and testing, system monitoring, and user support. The use of mobile platforms, cloud solutions, remote collaboration tools, automated testing, and deployment solutions has become common practice among product vendors and service providers.

The ITIL Official Practice Guides include recommendations on the use of automation tools as well as practical advice for successfully automating each practice. See Section 5.5, Appendix A, and the Official Practice Guides for details.

2.4.1.1 Artificial Intelligence

The rapid advancements in technology through AI and big data are transforming how organizations manage their products and services, creating a growing need for increased

automation and adaptability within digital product and service management. These technologies support more effective decision-making, deeper insights, and real-time responsiveness. However, they also introduce additional complexity and heightened expectations for efficiency. To remain competitive and effective in co-creating value, organizations must adopt practices that empower teams to respond swiftly to changing data, leveraging automation to enhance processes, reduce errors, and effectively manage the accelerating pace of technological innovation.

The purpose of using AI in digital product and service management is to enhance human decision-making and management activities, either by providing deeper insights or by automating routine tasks. AI enables systems to learn, adapt to new inputs, and execute tasks that traditionally require human involvement. By employing technologies such as deep learning and natural language processing, AI solutions can support a wide range of service management functions. This allows individuals and teams to improve the quality of their work, enhance decision-making, and increase the efficiency and effectiveness of services and processes. Ultimately, incorporating AI helps organizations better manage uncertainty and ambiguity.

Wide adoption of Generative AI (Gen AI) has had a great impact on many industries in the first two years after release of the first publicly available tools based on large language models. This impact is ongoing and the language models are evolving rapidly. Vendors of software solutions for product development and service management integrate AI capabilities in their products, supporting such areas as:

- software code generation, integration, analysis, and testing
- documentation automation
- continuous integration and deployment optimization
- knowledge capturing, management, and presentation
- configuration and asset management
- risk modelling, assessment, and management
- user support
- monitoring, event analysis, and predictive maintenance
- analysis and correlation of incidents
- and many others.

These AI-enabled capabilities are just examples. To describe how AI enables product and service management, organizations may use the following 6C Model (ITIL AI Capability Model).

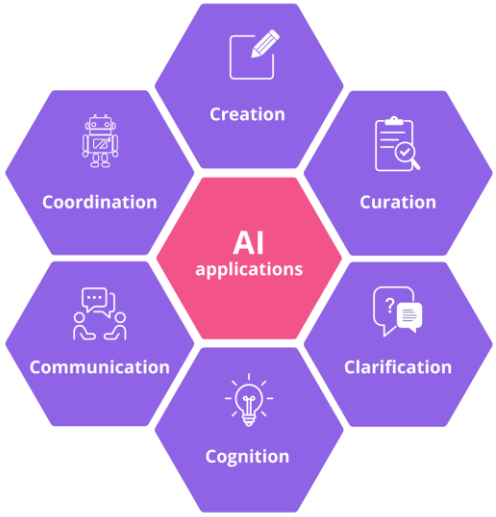


Figure 2.2 The ITIL AI Capability Model

The model provides a functional classification of AI solutions. It helps understand and communicate the range of possible applications of AI. It can also enhance AI governance by helping organizations tailor risk profiles, controls, and countermeasures to the specific functions of AI solutions, especially beyond it's intended use.

These capabilities are not mutually exclusive; many real-world use cases combine them. Each of the six capabilities is described in the Table 2.1 below.

Table 2.1 The ITIL AI Capability Model: capability descriptions

AI Capability	Description	Examples
1. Creation	AI generates net-new outputs in response to prompts or triggers. This includes producing content, code, documentation, or any other artifacts that did not exist before.	• Generating answers to users' questions. • Generating individualized texts for communications, adapting messages to stakeholders' language, role, and preferences. • Automatic generation of release notes, change announcements, and deployment plans based on structured release data. • Drafting service descriptions or Service Level Agreements (SLAs). • Generating a workflow based on defined conditions or business rules.
2. Curation	AI improves the quality, organization, and relevance of existing data or knowledge by identifying redundancies, outdated information, inconsistencies, or incompliance.	• Detecting and flagging obsolete knowledge base articles. • Detecting and cleaning up duplicated records in product and service management databases. • Highlighting discrepancies between SLAs and supporting contracts with suppliers. • Validating documents by checking alignment with approved corporate policies and rules.
3. Clarification	AI helps users find, understand, navigate, or improve existing content by summarizing, rephrasing, restructuring, or translating it.	• Summarizing a complex incident ticket for management reporting. • Rewriting a knowledge article for easier understanding. • Generating a context-specific summary report using a natural language prompt. • AI-enhanced classification and attribution of IT costs for accurate cost allocation, analysis, and reporting.

AI Capability	Description	Examples
4. Cognition	AI identifies patterns, anomalies, or hidden insights across data, enabling proactive detection, forecasting, and analysis.	• Analysing a major incident to better understand possible reasons and consequences. • Detecting recurring incident trends indicating a deeper problem. • Identifying bottlenecks in a process or a value stream. • Identifying potential issues caused by changes in complex environments. • Predicting increases in system workload based on historical usage patterns and seasonal trends.
5. Communication	AI acts as a communicative interface helping users interact with services and systems naturally.	• Chatbots helping users to get technical support. • Virtual agents assisting with service request submission. • Personalized major incident communication with end users, adapting messages to their language, role, and preferences. • AI agents that conduct surveys, capture feedback, and apply sentiment analysis to assess and report on stakeholder satisfaction
6. Coordination	AI autonomously executes, orchestrates, or triggers actions across systems, often in response to events, requests, or patterns.	• Triaging incoming user requests and assigning them to the most appropriate teams. • Automatically escalating high-impact incidents based on real-time analysis. • Triggering remediation workflows after detecting specific errors, events, or trends.

The emergence of Gen AI and its fast commoditization have raised many concerns regarding governance, ethics, and compliance. Although it may take time for relevant international, national, and industry-specific regulations to be developed and implemented, organizations should ensure effective governance of technology and data they use and process, especially when sensitive information is concerned.

Another important challenge amplified by the use of AI is the quality of data. AI tools are as good as the data they are trained on, and many organizations find that their accumulated product and service management records are not complete, accurate, and consistent for this purpose.

The new level of demand for data quality and control has increased the importance of effective data governance and management.

2.4.2 Data, information, and knowledge

The amount of data generated and processed by organizations and individuals is growing daily. Not only is the number of data assets increasing, but data is also generated in various formats and stored in increasingly diverse types of storage. The terms 'data', 'information', and 'knowledge' are often used interchangeably but they represent the journey from raw facts to usable understanding. Table 2.1 describes key differences between data, information, and knowledge.

Table 2.2 Differences between data, information, and knowledge

	Data	Information	Knowledge
Format	Raw facts and numbers: numbers, symbols, images, or observations in their unprocessed form.	Processed data with context and meaning: data becomes information when it is organized, analysed, and placed in a meaningful context.	Applied information and experience: knowledge builds upon information by adding understanding, interpretation, and insights.
Meaning	No intrinsic meaning: without context or interpretation, data lacks meaning or value.	Answers specific questions: information provides specific answers to questions like 'who', 'what', 'when', or 'where'.	Enables decision-making and action: knowledge helps individuals and organizations make informed decisions and solve problems.
Example	Sensor readings, customer names, website clicks, financial transactions.	Sales reports, weather forecasts, customer profiles, product instructions.	Expertise in a field, understanding customer needs, ability to diagnose and repair technical issues, ability to adapt to changing market conditions.

Although a useful simplification, the data-information-knowledge categorization does not address the non-linear, iterative nature of knowledge creation. In reality, knowledge systems involve feedback loops, contextual reinterpretation, and parallel workflows that blur the boundaries between the three categories. The categorization is always contextual: the same piece of information can belong to any of the three categories depending on the situation and the position of the person performing the categorization.

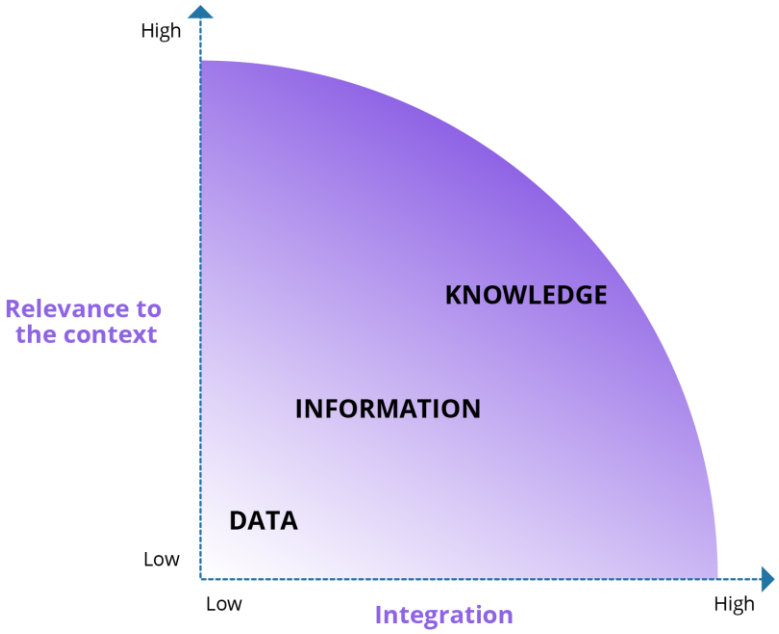


Figure 2.3 The unclear boundaries between data, information, and knowledge

The value of information is determined by the outcomes it enables for stakeholders. Out-of-context information does not have an intrinsic value; it is only valuable and effective when it leads to the desired outcomes. This is when information is perceived as 'knowledge' by those who use it. Outcomes may be assessed in terms of the organization's goals and strategy, consumer satisfaction, improved practices, and so on, depending on the context.

Detailed guidance on knowledge management and its dependency on effective data and information management can be found in the *ITIL Knowledge Management (Version 5)* Official Practice Guide.

Information and knowledge depend on data quality and availability. This is why it is important to ensure effective management of an organization's data assets.



Data governance
Data governance is a system of rules, policies, standards, processes, and controls organizations implement to manage their data assets effectively.

Data governance ensures data quality, security, usability, and availability throughout its lifecycle, from creation and collection to storage, usage, and deletion. It is typically guided by the following principles:

- **Strategic alignment:** ensuring the governance programme supports the organization's overall strategy and business objectives.
- **Accountability and ownership:** assigning clear responsibility for data assets and governance tasks to specific roles.
- **Defined policies and procedures:** establishing clear, documented standards for data classification, quality, security, access, usage, classification, and disposal.
- **Transparency and auditability:** making data management practices clear and traceable, allowing for audits and building trust.
- **Integrity:** ensuring honesty and openness regarding governance constraints, challenges, and decisions.
- **Adaptability:** the data governance framework should be flexible and evolve with changing business needs, technologies, and regulations.

2.4.3 Ensuring value from technology

The successful use of automation, data analytics, AI, and digital technology in digital product and service management includes the following three factors:

- Ensure that the use of technology is considered from the outset, by developing and maintaining a comprehensive information and technology management approach. The specific needs, opportunities, and methods for applying AI in service management vary across different services and stakeholders. This information and technology management approach should be established early in the product and service lifecycle, regularly reviewed, and continually updated.
- Understand the information and technology capabilities required throughout the organization's value system, assess existing capabilities, and identify any capability gaps. Develop clear action plans to address these capability gaps, ensuring that resources are available as needs arise.
- Assessment of information and technology capability should consider:
  - Information security and governance: how does the organization ensure ethical use and compliance with applicable data protection legislation?

- Data access and management: where and how will the organization source large volumes of data necessary for AI and analytics?
- Data quality: how suitable and reliable is the organization's data for achieving desired outcomes?
- Information and data legacy: what will happen to information and data when systems are retired or become obsolete?
- Digital literacy and skills: what competencies are required for effective AI integration and utilization?
- Leadership commitment: how actively is the organization's leadership supporting and promoting the adoption of AI-driven approaches?
- Technology infrastructure: how will the organization source and maintain infrastructure to support the use of AI effectively?

Ensure the information and technology management approach aligns with the ITIL Guiding Principles (see Section 5.2).



Technology and information are the core components of digital products and services. They also play a crucial role in effective product development and service management. The wide use of cloud, followed by rapid adoption of generative AI, provides many opportunities, but also creates challenges related to ethics, governance, and compliance. Organizations should ensure effective data governance to enable the use of AI technologies and support the effective and responsible use of information.

Find more information on the ITIL AI Capability model online.



ITIL Car Rental | Information and technology



Max: The information and technology dimension of ITIL Car Rental represents information created and managed by teams. It also includes technologies that support and enable our services. Applications and databases, such as our booking app and financial system, are part of the information and technology dimension as well.



Sam: We take data protection very seriously. Whether it is for car sharing or car rental, we collect personal data: ID, driving license, and so on. That is why we already have a solid data management system in place, that undergoes regular audits. So, when we introduced our new service, driverless cars, we were confident that there were no additional challenges around processing personal data. We were ready.



Max: That is true when we talk about user data. But we have new challenges now. We actively use AI and are highly concerned with AI governance; specifically, how we control its use. AI plays a critical role in vehicle navigation. While we do not manage the core navigation systems ourselves, we still hold responsibility for our customers' safety and that impacts our reputation. That is why we are asking our vehicle manufacturer to formally confirm they have an AI governance system in place, which provides the level of control and assurance we need.

2.5 Partners and suppliers

Every organization depends to some extent on services provided by other organizations. The 'partners and suppliers' dimension encompasses an organization's relationships with other organizations that are involved in the discovery, design, build, transition, operation, delivery, support, and/or continual improvement of products and services. It also incorporates contracts and other agreements between the organization and its partners or suppliers.

Relationships between organizations may involve various levels of integration and formality. This ranges from formal contracts with clear separation of responsibilities, to flexible partnerships where parties share common goals and risks and collaborate to achieve desired outcomes. Descriptions of the key types of relationships between organizations are provided in Chapter 3.

The role of third parties in an organization's product and service management varies. Some suppliers provide resources and services that are integrated in the organization's products and managed by the organization as a product or service component. Other suppliers (sometimes becoming key partners) take part in the organization's product and service management activities or take full responsibility for some of these activities. See Section 5.4.2 for some examples of this cooperation.

Most organizations participate in multiple supply chains that form complicated service networks where every organization acts as a service consumer and a service provider for many others. To manage these relationships and related dependencies, some organizations use specialized methodologies for service integration and management. This involves the use of a specially established integrator to ensure that service relationships are properly coordinated. Service

integration and management may be kept within the organization but can also be delegated to a trusted partner.

Factors that may influence an organization's strategy when using suppliers include:

- **Strategic focus:** some organizations may prefer to focus on their core competencies and to outsource non-core supporting functions to third parties; others may prefer to stay as self-sufficient as possible, retaining full control over all important functions.
- **Corporate culture:** some organizations have a historical preference for one approach over another. Long-standing cultural bias is difficult to change without compelling reasons.
- **Resource scarcity:** if a required resource or skillset is in short supply, it may be difficult for the service provider to acquire what is needed without engaging a supplier.
- **Cost concerns:** a decision may be influenced by whether the service provider believes that it is more economical to procure a particular resource from a supplier.
- **Risk concerns**: risks associated with dependency on a supplier should be considered and compared with the risk associated with insourcing.
- **Subject matter expertise:** the service provider may believe that it is less risky to use a supplier that already has expertise in a required area, rather than trying to develop and maintain the subject matter expertise in house.
- **External constraints:** government regulation or policy**,** industry codes of conduct, and social, political, or legal constraints may impact an organization's supplier strategy.
- **Demand patterns:** customer activity or demand for services may be seasonal or demonstrate high degrees of variability. These patterns may impact the extent to which organizations use external service providers to cope with variable demand.



All organizations depend on third parties and their services. An organization's strategy for engaging suppliers is influenced by factors such as strategic focus, corporate culture, resource availability, cost considerations, subject matter expertise, external constraints, and fluctuating demand patterns. Organizations often operate within complicated service networks, where a dedicated service integrator is needed to coordinate interdependencies, either managed internally or delegated to an external party.

ITIL Car Rental | Partners and suppliers



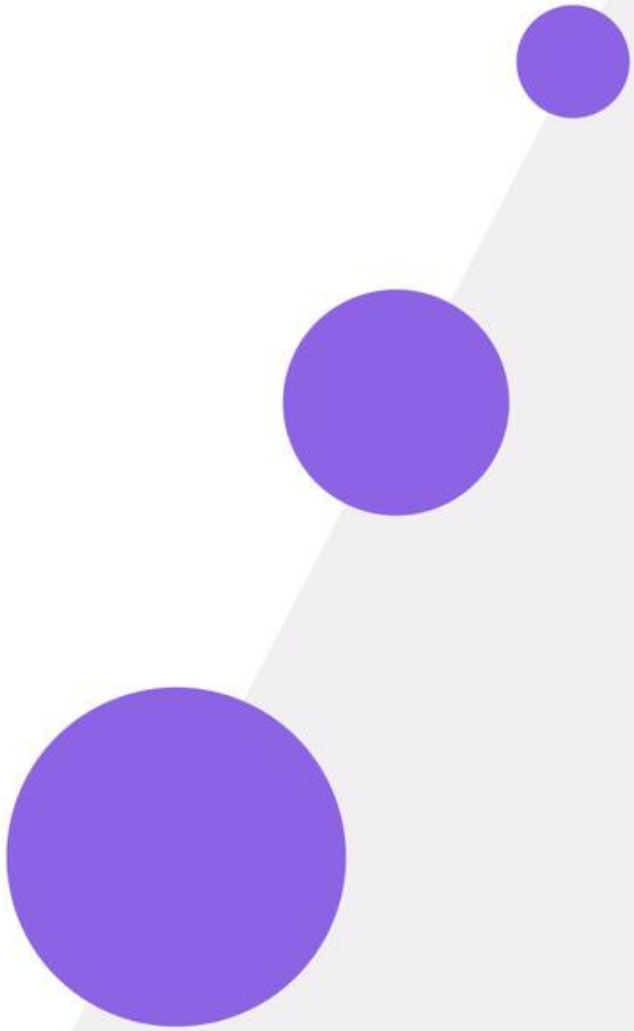
Max: ITIL Car Rental depends on a network of third-party organizations to deliver high-quality services. Some of these suppliers support us behind the scenes, while others are deeply embedded in our product and service management activities. Together, they help us scale, specialize, and innovate across all areas of our business.



Anna: These partnerships bring a range of considerations. With the manufacturer of our driverless vehicles, deep integration and shared accountability were essential, driven by safety requirements, their subject matter expertise, and reputation. In contrast, for charging services, priorities were different: flexibility and reach were paramount, and the basic contract proved sufficient.



Max: ITIL Car Rental depends on a network of third-party organizations to deliver high-quality services. Some of these suppliers support us behind the scenes, while others are deeply embedded in our product and service management activities. Together, they help us scale, specialize, and innovate across all areas of our business.



CHAPTER 3
KEY CONCEPTS OF DIGITAL PRODUCT AND SERVICE MANAGEMENT

3.1 The service economy

Since the mid-twentieth century, the role and share of services in the global economy have steadily increased, leading to a service-based economy. This has been stimulated by many factors, including globalization, digital transformation, and the transition from manual to intellectual work. Global challenges, such as the COVID pandemic, have additionally amplified this trend.

Today, the services sector plays a crucial role in the modern economy, contributing to economic growth, job creation, and productivity. It encompasses a wide range of activities, including:

- Financial services
- Professional services
- Transportation
- Logistics
- Tourism
- Retail
- Digital services

Although listed last, digital services play a vital role in the modern economy: digital technologies enable and support services across all industries, opening new opportunities for value creation and performance optimization. Technology-enabled marketplaces provide opportunities for global economic exchange between individuals and organizations in all industries.

3.1.1 Service value

Value
Value is the perceived benefits, usefulness, and importance of something.

Based on this definition:

Service Value
Service value is the perceived benefits, usefulness, and importance of a service.

Achieving desired outcomes requires resources (and therefore costs) and is often associated with risks. Service providers help their consumers to achieve outcomes, and in doing so, take on some of the associated costs and risks. Service providers are usually specialized in specific types of services. This specialization means that they have access to required resources, knowledge, and skills. Combined with experience in the chosen specialization, these ensure that consumers receive outcomes with high quality and level of assurance.

Service
Service is a means of enabling value co-creation by facilitating outcomes that consumers want to achieve, without the consumer having to manage specific costs and risks.

At the same time, services can introduce new costs and risks, and in some cases, they can negatively affect some of the intended outcomes, while supporting others. Services are perceived by service consumers as valuable only when they have more positive effects than negative, as depicted in Figure 3.1

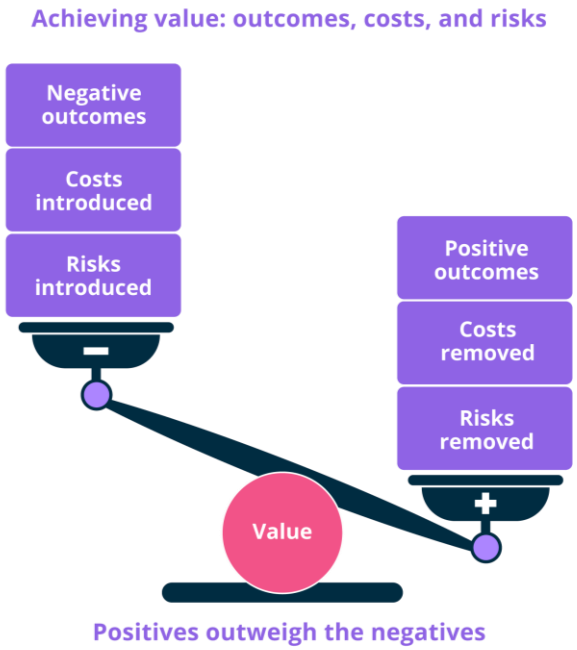


Figure 3.1 Achieving value: outcomes, costs, and risks

Service value at ITIL Car Rental



Max: In cities with high tourist traffic, there has always been demand for car rental services. However, lately, many residents of large cities, especially young people, prefer 'car-as-a-service' models, such as taxis or car sharing, even for regular short trips, instead of owning a private vehicle. This choice is not only more economical but also more environmentally responsible, helping to reduce emissions and overall traffic congestion in the city. At the same time, it offers flexibility and comfort not available in public transport.

At ITIL Car Rental, we provide a variety of services: car-sharing, car rental, and our brand-new service, driverless cars. Our service helps customers achieve mobility without the extra costs related to owning a car. But for our services to be truly valuable, we must consider not just the convenience we provide, but also how we manage costs and risks for our customers. That is the true essence of service value.

3.1.1.1 Outcomes

Acting as a service provider, an organization produces outputs that help its consumers to achieve certain outcomes. It is important to clarify the difference between outputs and outcomes. For example, one output of a wedding photography service may be an album, in which selected photos are artfully arranged. The outcome of the service, however, is the preservation of memories and the ability of the couple and their family and friends to easily recall those memories by looking at the album.

Output
Output is a tangible or intangible deliverable of an activity.

Outcome
Outcome is a result for a stakeholder enabled by one or more outputs.

Depending on the relationship between the provider and the consumer, it can be difficult for the provider to fully understand the outcomes that the consumer wants to achieve. In some cases, the service provider and the service consumer work together to define the desired outcomes. For example, Business Relationship Managers (BRMs) in internal IT or HR departments may regularly engage with customers and discuss their needs and expectations. In other cases, the service providers analyse existing needs and expectations of the service consumers and design services to meet or exceed their expectations. This is typical for standardized services offered to a wide consumer group. Mobile operators, broadband service providers, and transport companies usually operate this way. Finally, some service providers predict or even create demand for certain outcomes, forming a target group for their services. This may happen with innovative services addressing needs that consumers were not even aware of before. Examples include social networks, smart home solutions, or AI assistants.

When enabling desired outcomes for service consumers, services may also prevent or reduce other desired outcomes or introduce undesired ones. The most common example is that delegating a task to a service provider may hinder the development of skills, knowledge, and experience for achieving the outcomes. Other side-effects are possible. Over-reliance on social networks may affect people's social skills; extensive use of AI assistants may negatively impact critical thinking and analytical skills.

In addition to the intended and anticipated positive and negative effect on service consumers, services may have unintended and surprising outcomes, both positive and negative. Service providers should capture and analyse evidence of such unplanned effects and address them. This may include further exploration and reinforcement of the unexpected positive outcomes, as well as mitigation and prevention of the initially unexpected negative outcomes.

As shown in Figure 3.1, positive outcomes offered by a service should overweigh the negative ones for the service to be perceived as valuable.

It is important to note that the value expected by a consumer is often dependent on successful consumption of many services delivered independently by multiple service providers. For example, when a family travels to another town to see their favourite band, the overall success of the day (in other words, value experienced by the consumer) may depend on: the train (airplane or any other public transport used); the event venue; the performance; the dinner; the train back home. These parts of the users' journey are supported by services and service providers which have little or no coordination, and there may be no single service provider responsible for the end-to-end experience. However, from the family's perspective the value is co-created by them all, and if one of them fails, the overall experience may be affected negatively. This means that the co-creation of value through services has two perspectives:

- It is always a combination of service consumption (by the service consumer) and service provision (by the service provider).
- It may include delivery of many services by many service providers, who may have little knowledge of or interest in each other.

To reduce the risks of poor integration between service providers delivering a combination of services for a customer, specialized service integrators may be involved. A common example is operators of packaged tours.

ITIL Car Rental | Outcomes



Max: At ITIL Car Rental, an output might be the customer arriving at their destination. The outcomes vary for different stakeholders. For our customers, it is flexibility and comfort of city transportation at affordable prices. For the cities, it is fewer cars on the road, cleaner air, and a potential reduction in traffic accidents.

3.1.1.2 Costs

Cost
Cost is the amount of money spent on a specific activity, resource, product or service.

From the service consumer's perspective, there are two groups of cost involved in service relationships:

- Costs reduced or fully removed from the consumer by the service (as intended in a service offering). This may include costs of staff, technology, and other resources, which the consumer does not need to provide or manage.
- Costs imposed on the consumer by the service (the costs of service consumption). The total cost of consuming a service includes the price charged by the service provider (if applicable), plus other costs such as staff training, costs of resource utilization, procurement, and so on. Some consumers describe this as what they need to 'invest' to consume the service.

Both types of cost are considered when the consumer assesses the value they expect the service to create. To ensure that the correct decisions are made about the service relationship, it is important that both types of cost are fully understood.

From the provider's perspective, a full and accurate understanding of the cost of service provision is essential. Providers need to ensure that services are delivered within budget constraints and meet the financial expectations of the organization. Effective service financial management practices support the understanding and management of service provision costs. See Appendix A for the practice overview and Section 5.4 for a generic description of the ITIL management practices.

ITIL Car Rental | Costs



Anna: By offering this service, we allow our customers to reduce or eliminate the cost of owning a car. At the same time, every journey with our car is associated with costs for our customers. Customers decide which means of transportation makes more sense to them.

3.1.1.3 Risks

Risk
Risk is a possible event that could cause harm or loss or make it more difficult to achieve objectives.

As with costs, there are two types of risk that are of concern to service consumers:

- Risks reduced or fully removed from a consumer by the service (part of the value proposition). These may include failure of the consumer's server hardware or lack of staff availability. In many cases, a service may only reduce a consumer's risks, but the consumer may decide that this reduction is sufficient to support the value proposition.
- Risks imposed on a consumer by the service (risks of service consumption). An example of this would be a service provider ceasing to operate or experiencing a security breach.

It is the duty of the provider to manage the service-specific risks on behalf of the consumer. Understanding and management of the service risks is supported by effective risk management, an important management practice. See Appendix A for the practice overview and Section 5.4 for a generic description of the ITIL management practices.

ITIL Car Rental | Risks



Maria: When using our driverless cars, customers delegate to us all risks related to road safety. We take responsibility for ensuring an accident-free journey and guarantee that all our vehicles are road-worthy. At the same time, in the unlikely event of a software error or cyber-security incident, the customer's journey could be affected. Such risks would not typically arise if the customer was driving their own car or using a traditional taxi service.



Max: Risk is not just technical; it includes reputation too. One bad customer experience can go viral. That is why we take incident management seriously.

3.1.2 Digital services and digital products

The key concepts of service management are universally applicable to all types of services. However, the following chapters of this book and other ITIL materials are primarily focused on digital services.

Digital service
Digital service is a service that fully or largely relies on digital products.

Digital services are always based on digital products. Products provide capabilities, while service offerings describe the potential value they offer to customers. When customers accept these offerings, service delivery and consumption begin. In a simple scenario, one service may be based on one product. More often, the relationships are more complicated: one product may enable many services, and one service may be based on several products.

Digital product
Digital product is a combination of an organization's resources based on digital technology and designed to offer value to consumers.

What makes a product digital? Is a mobile phone a digital product? Or a modern car? The answer is not black-or-white: just like 'goods and services', 'analogue and digital' is a spectrum: from 'purely analogue' to 'digitally supported', to 'digitally enabled' and finally, 'purely digital' products.

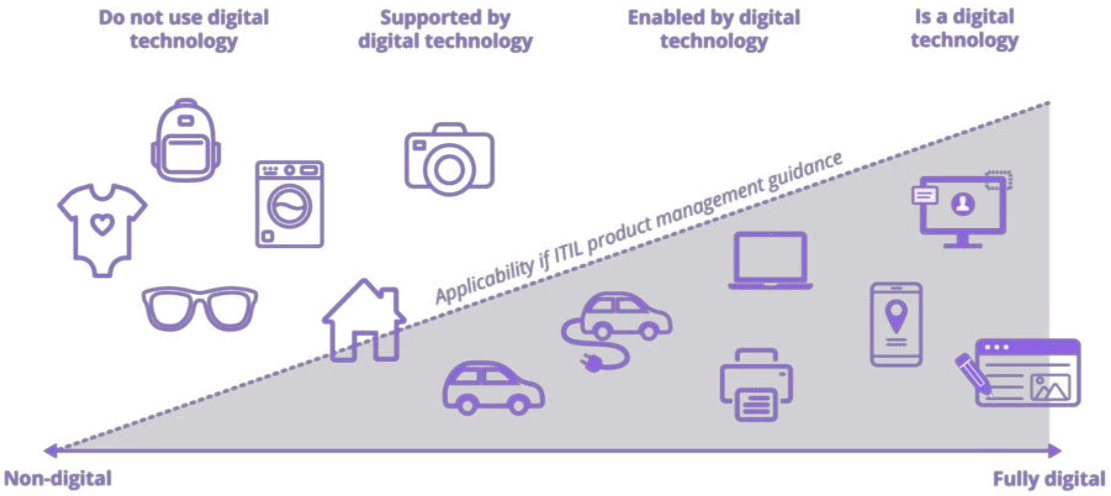


Figure 3.2 Role of digital technology: from non-digital to purely digital products

- 'Purely analogue' products work without digital technology.
- 'Digitally supported' products perform the core functions without digital technology, but use it for non-core functions
- 'Digitally enabled' products have analogue and physical components but depend on digital technology in fulfilling their core functions. Without digital technology, their potential value disappears.
- 'Purely digital' products are software products with no analogue or physical components.

Non-digital products and components typically:

- depend on physical resources and materials
- depend on physical delivery
- are impossible to diagnose and fix remotely
- have clear border between production and use
- use 'transfer of goods' as the primary form of value co-creation.

Digital products and components typically:

- depend on digital resources (software and virtual infrastructure)
- can be delivered instantly and digitally
- can be diagnosed, fixed, and improved remotely
- are developed, improved, and used simultaneously
- use 'access to resources' as the main form of value co-creation.

These differences have led to a new approach to management of digital products, very different from the traditional project-based design and production systems. Continual, iterative product management shares guiding principles and many management practices with service management and allows for close integration of these disciplines into integrated, value-focused product and service management described in *ITIL Product*.

ITIL recommendations apply primarily to digitally enabled and purely digital products.

Service offering
Service offering is a formal description of one or more services designed to address the needs of a target consumer group. A service offering may include goods, access to resources, and service action.

Relationships between technology resources, digital products, service offerings, and digital services are shown in Figure 3.3.

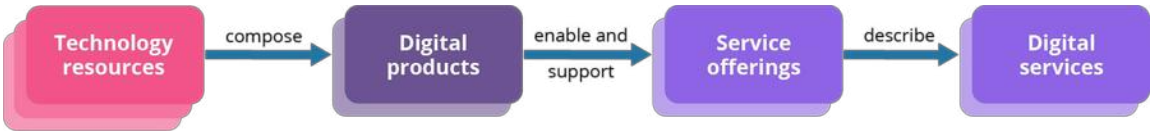


Figure 3.3 Relationships between technology resources, digital products, service offerings, and digital services

According to the definition of service offering, there are three forms of interaction between a service consumer and a service:

- **Transfer of goods:** some services include transfer of goods from a service provider to a service consumer. In the case of digital services, this is a rare but possible form of service interaction. Examples include transfer of equipment or consumables. However, many service providers aim to decrease or eliminate the need for transfer of goods as part of their digital services.
- **Service action:** (definition) An action performed by a service provider or jointly by a service provider and a service consumer. Fulfilment of service requests is a common form of service actions. Other examples include delivery of goods, user training, consultations, and so on. This form of service interaction is very common in several industries such as hospitality, education, transport, and many others. However, it is relatively rare in digital services, and many service providers aim to decrease or eliminate the need for service actions as part of their digital services.
- **Access to resources:** the service consumer gains access to the service provider's resources and uses them according to the agreed terms and conditions. Non-technology examples include access to hotel rooms, rented vehicles, office facilities, or any other resource managed by the service provider. This is the main form of service interaction between service consumers and digital services. Examples include service consumer's access to applications, platforms, web resources, equipment, networks, and cloud-based resources. Many service providers design their products and services so that access to resources is the sole form of service interaction. This approach maximizes the benefits of scalability and availability of digital technology. Other forms of service interaction are limited by the availability and scalability of goods and service provider's personnel.

Note that although these three forms of interaction have clear boundaries from the service provider's point of view, they may look and feel different from the service consumer's perspective. For example, when an employee is provided with a laptop and other equipment, it looks like 'transfer of goods', but in many cases the ownership of the equipment remains with the service provider, meaning that the correct category is 'access to resources'. When a user engages in a conversation with a chatbot, it may look and feel as a 'service action', but from the service provider's perspective this is 'access to resources'. Service offering (presented in the form of a service catalogue or a service specification) should describe the service consumer's perspective but take legal, financial, and regulatory aspects into account.

Organizations engage in service relationships, forming chains and networks, where each organization acts as a service consumer for multiple providers and a service provider for multiple consumers. These relationships are shown (in a simplified linear way) in Figure 1.5.

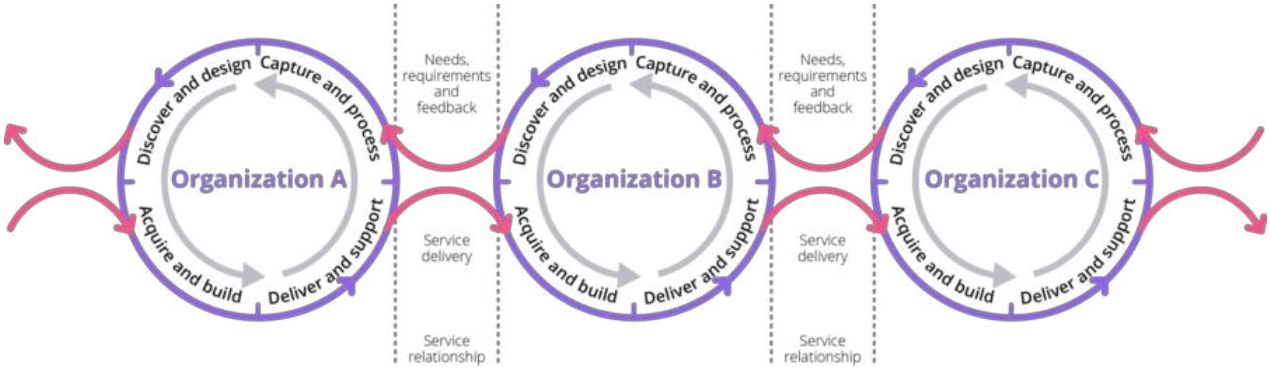


Figure 1.5 The ITIL Service Relationship Model

Digital services and digital products at ITIL Car Rental



Alex: ITIL Car rental service has a long history, and the role of digital technology has evolved significantly over time. Initially, digital services were only used as optional alternatives to more traditional methods; for example, customers could book a car by phone or via a website. Later, mobile apps were introduced and quickly became the go-to way of booking for most of our customers. The addition of new features, such as in-app payments, AI-based damage detection, and smart fuel-level tracking, has made the whole user journey, from booking to vehicle return, fully digital. The car rental service has become a digitally enabled service. Today, as we introduce driverless cars, we offer a digital service of private transportation, built on a digital product that integrates vehicles from our partner with our own applications and information systems.



Max: But is it correct to call a driverless car a digital product? Afterall, it is still a vehicle made of plastic and metal and not a piece of software.



Alex: Great question, Max, you are right! However, the role of digital technology in these cars and in the way they operate is critical. They simply will not work without it, just as a smart phone or a laptop. Digital products can include hardware.

3.2 Service relationships

3.2.1 Service relationships roles

In service relationships, organizations act as a service provider or a service consumer.

Organization
Organization is a person or a group of people that has its own functions with responsibilities, authorities, and relationships to achieve its objectives.

This means that in the context of service relationships and management system, the term 'organization' may apply to a whole legal entity (a company), a part of a legal entity (one or several teams within a company), a group of legal entities (group of companies), or a mix of all these variations. An organization may be a self-employed individual, or a multi-national corporation, or anything in between.

In service relationships:

Service consumer
Service consumer) is an organization responsible for the procurement and use of services.

Service provider
Service **provider**) is an organization responsible for the delivery and support of services.

Digital services are based on digital products; the service provider role is often combined with the role of digital product vendor.

Digital product vendor
Digital product vendor is an organization responsible for the creation and continual improvement of digital products and related service offerings.

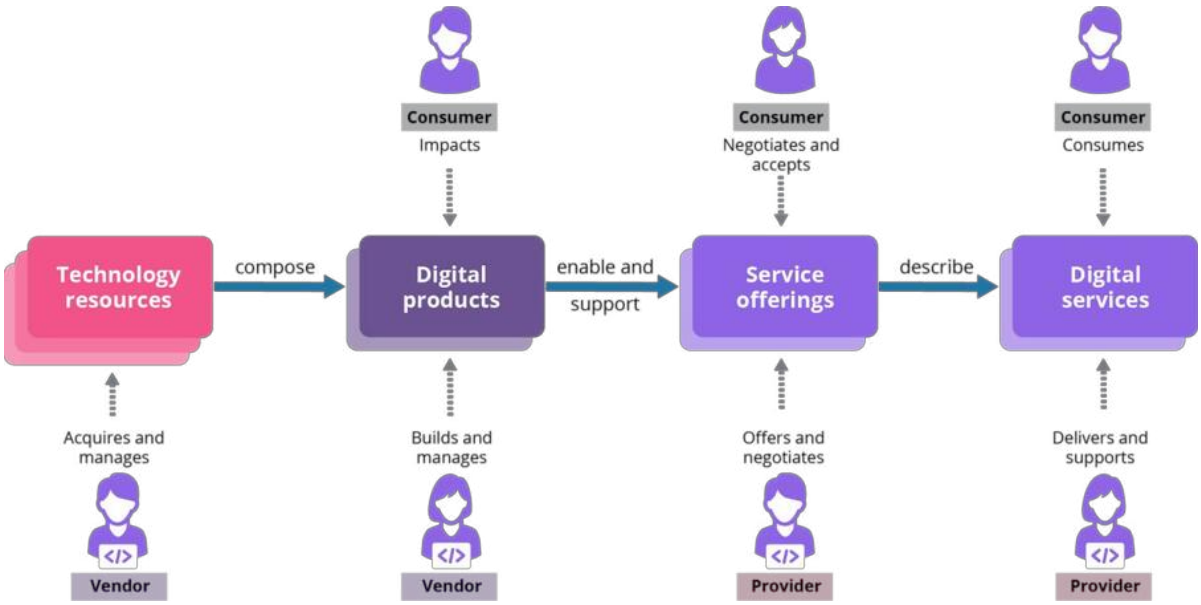


Figure 3.4 Different organizations' roles in management, delivery, and consumption of products and services

When an organization defines its purpose and strategy, it also decides on the roles it will be playing in service relationships. This affects many decisions about the organization's design and operation (for additional information see Section 5.4).

It is important to remember that organizations' roles apply to a particular service relationship. An organization acting as a service provider in one service relationship may be playing the service consumer role in another. All organizations play the service provider and service consumer roles; many organizations are also product vendors.

ITIL Service relationships at ITIL Car Rental



Max: ITIL Car Rental acts as both a provider and a consumer. We deliver services to our customers, but at the same time we rely on our growing network of partnerships to make this possible. This includes charging network operators, mobile charging services, cleaning providers, and the manufacturer of our fully autonomous driverless cars.

3.2.1.1 Roles representing a service consumer organization

Service consumer is a generic organization's role. In practice, there are three specific roles representing service consumer organization in relationship with service providers and product vendors. These roles are sponsor, customer, and user.

Customer
Customer is the role that defines the requirements for products and services and takes responsibility for the outcomes of service consumption.

User
User is the role that uses services.

Sponsor
Sponsor is the role that authorizes budget for service consumption.

For example, if a company wishes to acquire mobile phone services for its employees from a mobile operator (who acts as a service provider), the consumer roles may be distributed as follows:

- The Chief Information Officer (CIO) and key communications team members fill the role of customer when they analyse the mobile communications requirements of the company's employees, negotiate the contract with the wireless carrier, and monitor the carrier's performance against the contracted requirements.
- The Chief Financial Officer (CFO) fills the role of the sponsor when they review the proposed service arrangement and approve the cost of the contract.
- The employees (including the CIO, CFO, and communications team members) fill the role of users when they order, receive, and use the mobile phone services according to the agreed contract.

At the same time, an individual private consumer of the same mobile operator (a person using the mobile network) typically acts simultaneously as a user, customer, and sponsor.

It is important to identify these roles in service relationships to ensure effective communication and stakeholder management. These roles may have different, and sometimes even conflicting, expectations from services and different definitions of value. They also have different service journeys and service experiences

ITIL Car Rental | Service consumer roles



Max: At ITIL Car Rental, most of our service consumers are individuals who take on all three roles in the service relationship: sponsor, customer, and user. They decide to book a car, manage the reservation, and ride in the vehicle themselves. That is why we designed the entire journey to be as seamless as possible, from booking to drop-off.



Anna: That is true for driverless cars and car-sharing services. However, we also have contracts with organizations that use our car rental service. In those relationships, the customer role is fulfilled by the consumer organizations' procurement departments or corporate travel teams, while the actual users of our service are the employees of the consumer organizations.



Max: That is true; but who acts as a sponsor?.



Anna: In most cases, we do not know, as cost justification and fund allocation occur between the customer and the sponsor, and we are not involved.

3.2.2 Types of service relationships

Service relationships involve sharing resources, data, and sometimes reputation with another organization. There are different levels of engagement characterized by different levels of sharing and dependency. The core three types of service relationships are basic, cooperative, and collaborative (the last one is also called 'partnership').

Table 3.1 Types of service relationships

	Basic relationship	Cooperative relationship	Collaborative relationship (partnership)
Typical focus	Support and efficiency	Improvement and effectiveness	Innovation and growth
Typical organizational level involved in the relationship	Operational	Operational and tactical	Operational, tactical, and strategic
Typical service types	Commercial off-the-shelf services, out-of-the-box services, highly standardized commodity services, or goods supply	Services that must be configured or customized to fulfil the needs of the service consumer	Custom or bespoke services with unique value propositions
Typical types of service agreement	Standard contracts, Service Level Agreements (SLAs), and experience-based agreements mostly for mass market	Advanced SLAs, experience-based agreements, or outcome-based agreements	Bespoke contracts, outcome-based agreements, or no formal agreement
Examples	Standardized services offered to a wide group of individual external service consumers. This is how mobile operators, broadband service providers, and transport companies usually operate. Cloud service providers offering cloud storage and computing resources to business customers are another common example.	Managed service providers often tailor their services to the specific requirements of customers. In large organizations using shared service providers (sometimes this role is played by a subsidiary), service relationships with the shared service provider are often cooperative.	Internal service providers often aim to establish a collaborative relationship with their service consumers (internal IT team or another service provider – with the business units of the company). Sometimes partnerships form between external service providers and their consumers, if they have a shared goal, high level of mutual dependency, and high level of trust.

When organizations choose to consume a service, they choose an appropriate type of service relationship. The choice depends on the role of the service in the organization, the need for customization, and the level of trust towards the service provider. Similarly, organizations acting as a service provider target their service offerings to a type of service relationship supporting their service strategy. Their preferred type of service relationship depends on the role of the service consumer in the provider's organization, readiness and ability to customize the services, and the size of the target market.

It is critical for a successful service relationship that the service provider and the service consumer aim at the same type of service relationship. Misalignment of the target service relationship types between the two parties causes misunderstanding and dissatisfaction.

ITIL Car Rental | Types of service relationships



Max: At ITIL Car Rental, we maintain several types of relationships. With our cleaning provider, we have a cooperative relationship, working closely to coordinate cleaning schedules. With our charging network providers, our relationship is more basic: we align on technical integration and user access, but they operate independently under a standard subscription contract. In contrast, with the manufacturer of our driverless vehicles (a strategic partner of ours), we have a fully collaborative relationship. We have integrated their autonomous system directly into our app and we work together to plan updates, test new features, and align on user experience design.

3.2.3 Service journey

Service relationships of two organizations are not static. They develop, forming a journey with several distinct steps.

Service journey
Service journey is the sum of activities and interactions performed by organizations engaged in service relationships to fulfil their roles as a service provider and a service consumer.

Figure 3.4 describes the steps of the service journey and the key tasks of each party.

Although described as a sequence, these steps may occur in different order or take place simultaneously for different services and stakeholders. A service journey often includes loops and may skip some steps. It is practical to treat them as 'stepping stones' with multiple possible routes, rather than as a predefined linear process.

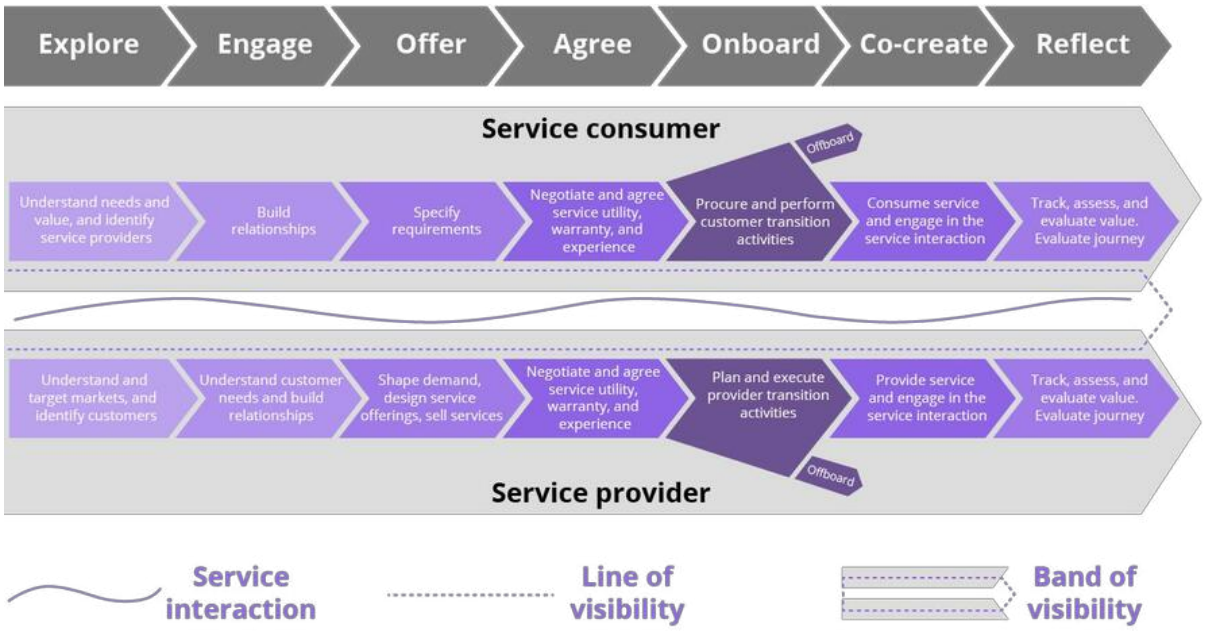


Figure 3.5 The ITIL Service Journey Model

Explore: understand markets and stakeholders. The service journey often begins before the service provider and service consumer have established a relationship. Both parties may explore their own needs and market opportunities for identifying parties that may contribute to the fulfilment of their respective needs. This exploration may include aspects such as operational context, strategic objectives, and organizational capabilities. On the service consumer side, this step involves customers who may consult with sponsors and key users.

Engage: foster relationships. An important precondition for co-creating value through services is a functioning relationship between the service provider, service consumer, and other stakeholders. Good relations are a prerequisite for a cooperative relationship or partnership. On the service consumer side, this step involves customers (or their representatives, such as buyers) and may require sponsor's approval.

Offer: shape demand and service offerings. To determine whether the parties may benefit from a mutual service relationship, the service consumer and service provider should build a **business case** and articulate, shape, and match their demand and supply in the form of requirements and service offerings. Products and services can be designed only when the service consumer needs are well articulated and understood. On the service consumer side, this step involves customers (or their representatives, such as buyers and legal specialists) and requires sponsor's approval.

Agree: align expectations and agree service. It is crucial to align expectations, plan value co-creation and tracking, and agree service scope and quality before investing. On the service consumer side, this step involves customers (or their representatives, such as buyers) and requires sponsor's approval.

Onboard: get on board or leave the journey. Whether or not the parties come to an agreement, they must undergo a transition that includes the integration or separation of both parties' resources. On the service consumer side, this step involves customers and users.

Co-create: provide and consume. The service consumer makes use of accessible service provider resources, accepts and uses the goods provided, and acts together with the service provider to

co-create value based on the agreed service offerings. On the service consumer side, this step involves users and may require management and coordination from the customer.

Reflect: capture value and improve. Value must be tracked and evaluated, and improvements must be applied continually to maintain and increase the service value. On the service consumer side, this step involves users (providing feedback), customers (analysing and reporting service outcomes) and sponsors (confirming or changing the funding).

In Figure 3.5, the space shared between the service provider and the service consumer is the band of visibility.

Band of visibility
Band of visibility is the sum of the aspects of the service consumer organizations visible to the service provider, and the aspects of the service provider organizations visible to the service consumer. Band of visibility depends on the type of service relationship: the closer the service relationship, the wider the band of visibility.

The *ITIL Experience* Official Book provides detailed practical guidance on management of the service journey for both service provider and service consumer roles. It addresses how this journey impacts customer and user experience and how these experiences vary depending on the types of services and service relationships.

Customer experience (CX)
Customer experience (CX) is the sum of functional and emotional interactions with a service and service provider as perceived by a service customer.

Customer experience is shaped primarily by interactions with a service provider's management system throughout the service journey.

User experience
User experience is the sum of functional and emotional interactions with a service and service provider as perceived by a service user.

User experience is shaped by the design and performance of a digital product and by service interactions with the service provider's management system during service consumption and other steps of the service journey where user is involved.

ITIL Car Rental | The service journey



Maria: We have mapped the full journey of our service consumers, from discovering our app, to taking their first trip, to becoming regular customers. Each step is designed for a seamless experience.



Omar: To use our driverless cars, our customers download the app, link their payment method, review the safety guide, and book their trip. However, we monitor every behind-the-scenes interaction: vehicle availability, battery charging status, and drop-off coordination.

3.2.4 Service quality

As described above, services should enable value co-creation by facilitating desired outcomes. The co-creation of value is a combination of service consumption (by the service consumer) and service provision (by the service provider). This makes it difficult for service providers, especially in a basic or cooperative service relationship, to specify the outcomes and take responsibility for their realization. Instead, the parties should establish a shared understanding of the target and acceptable service quality, typically described as a combination of service outputs and user experience.



Service quality
Service quality is the sum of the characteristics of a service that are relevant to its ability to satisfy stated and implied needs.

To manage the quality of services, organizations usually translate stakeholder expectations and needs into metrics, then organize and manage the resources appropriately. These metrics provide a formal definition of the service level of a particular service.



Service level
Service level is a set of metrics that define expected or achieved service quality.

Service level metrics fall into four categories: utility, warranty, sustainability, and experience. All four categories are present in every service to a greater or lesser degree, depending on the type of service and the relationship between the service provider and service consumer. The level of formality also may vary, as described in Table 3.1.



Utility
Utility is the functionality offered by a product or service to meet a particular need. Utility can be summarized as 'what the service does' and can be used to determine whether a service is 'fit for purpose'. To have utility, a service must either support the performance of the consumer or remove constraints from the consumer. Many services do both.

Warranty
Warranty is the assurance that a product or service will meet the agreed requirements. Warranty can be summarized as 'how the service performs' and can be used to determine whether a service is 'fit for use'. Warranty typically addresses such areas as the availability of the service, its capacity, levels of security, and continuity. A service may be said to provide acceptable assurance, or 'warranty', if all defined and agreed conditions are met.

Sustainability
Sustainability is the assurance that a product or service meets and will continue to meet the requirements for environmental stewardship, social progress, and economic growth.

Sustainability requirements may include responsible sourcing of materials and components, responsible work and employment practices, use of clean energy, low carbon footprint, incorporation of recycled and recyclable materials, transparent supply chains, and others. These requirements may originate from national and international regulations and standards or be defined in the organization's sustainability strategy. Service offering addressed to individual consumers should take their sustainability preferences and expectations into account.

Sustainability requirements and goals affect both the organization's products and services and the way the organization works. Sustainability is an important aspect of organization's strategy. *ITIL Strategy (Version 5)* explores this topic further.

User experience (UX)
User experience (UX) is the sum of functional and emotional interactions with a service and service provider as perceived by a service user.

Factors that lead to a positive experience include ease of use, attractiveness of interface, relevance of the service to achieving the customer's or user's objectives, ability to access support when needed, ease of acquitting the service, and perception of the value of the service. For designing and balancing experience measures with utility, warranty, and sustainability, see *ITIL Experience (Version 5)* Official Book.

No one of the service level categories is more important than the other. Some approaches assume that if the focus is on one (for example, experience), the others will take care of themselves. This is not true, especially when taking the desired value and outcomes of the service into account.
For example:

- It is possible to have a wonderful experience using a service that has no benefit to the organization.
- There is no point spending significant amounts of money achieving high availability for a service that does not require real-time access.
- Exceptional functionality and up-to-date backlogs mean little if the infrastructure is unavailable or slow.
- Products and services sourced from unofficial or grey market suppliers may meet immediate requirements for utility and experience, but they can be dangerous and unreliable in the long term.

ITIL Car Rental | The service journey



Omar: We aim to ensure high availability of our apps even at the busiest times, we monitor performance of all our systems, and we are sure that we deliver high quality services. We expect our customers to be very happy.



Sam: To use our driverless cars, our customers download the app, link their We continually improve the usability and functionality of our digital products, we test them thoroughly, and optimize them for performance, reliability, and observability. I personally enjoy using our apps and believe that they are loved by our users.



Anna: Although we consistently deliver high-quality solutions, we have been receiving mixed feedback from our customers. We realized that we need to pay more attention to user experience. Measuring the technical performance of the service is not enough. Going forward, we will actively monitor and evaluate user sentiment and formal feedback, analysing these alongside technical data.

3.2.5 Service level agreements

The common way to establish a shared understanding of the expected and achieved service quality and to manage service improvement is a Service Level Agreement (SLA).



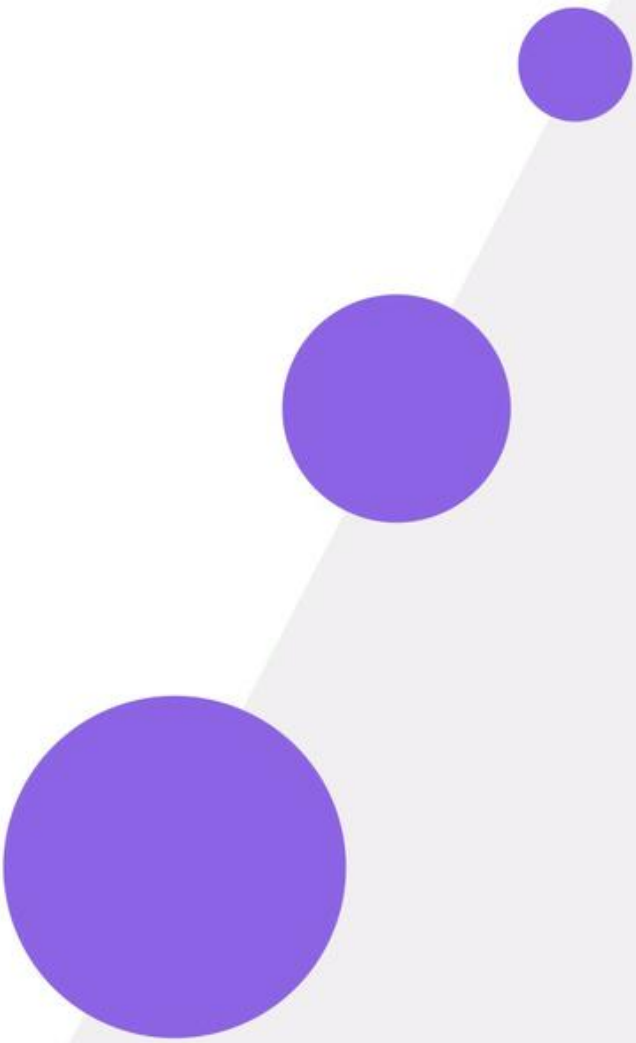
Service Level Agreement (SLA)
Service Level Agreement (SLA) is a documented agreement between a service provider and a customer that identifies the services provided and the agreed level of each service.

The level of formality, scope, and customization of SLAs depends on the type of service relationship and the nature of the services. At the very least, SLAs describing a digital service should describe utility, warranty, and sustainability of the service. When the services are consumed by users (as opposite to infrastructure and platform services that may have no direct user touchpoints), it is a good practice to include user experience metrics in the SLA.



To measure and manage user experience with individual services, it is recommended to include it in the SLAs, rather than create separate experience level agreements. Service value is perceived as a combination of utility, warranty, sustainability, and experience.

Managing service levels and SLAs is supported by the management practice of Service Level Management (SLM). See Appendix A for the practice overview and Section 5.5 for a generic description of the ITIL management practices. For managing the experience dimension of service levels and SLAs, see *ITIL Experience (Version 5)* Official Book.



CHAPTER 4
THE ITIL PRODUCT AND SERVICE LIFECYCLE

4.1 The ITIL Product and Service Lifecycle and lifecycle management activities

As described above, user and customer experience depend on the quality of the digital products and on the management system of the service provider. These two factors are closely interconnected.

As shown in Figure 1.5, to ensure high quality of their services, organizations:

- capture and process customers' needs, requirements, and feedback
- discover needs and opportunities, and design digital products and services
- acquire necessary resources and build digital products
- deliver and support digital services.

This high-level description highlights important milestones of the ITIL Product and Service Lifecycle and important activities of an organization acting as product vendor and service provider. However, this list is not complete. A more detailed ITIL Product and Service Lifecycle model, shown in Figure 4.1, includes eight lifecycle stages. Moving through the Lifecycle, the focus of management shifts between digital product and digital service:

- **Discover:** explore and prioritize needs and opportunities for the product and service.
- **Design:** create product and service solution meeting or exceeding the requirements.
- **Acquire:** procure or allocate resources required to build the product.
- **Build:** create, configure, and test technology solutions constituting the product.
- **Transition:** deploy the new product into the live **environment**.
- **Operate:** operate the product to ensure agreed performance.
- **Deliver:** deliver digital services based on the live products.
- **Support:** restore normal operation of products and delivery of services when needed.

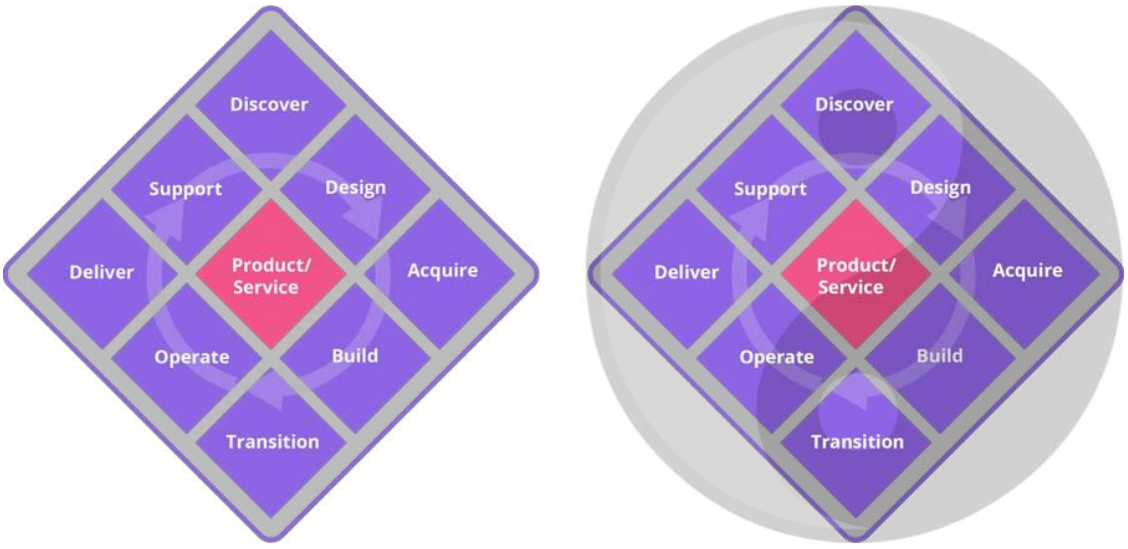


Figure 4.1 The ITIL Product and Service Lifecycle Model | Duality

To manage digital products and services throughout their shared lifecycle, organizations perform lifecycle management activities described in Sections 4.2-4.9.

Although these activities enable and support the Product and Service Lifecycle, they are not performed as a cycle. From the organizational perspective, these activities form a value chain.

Value chain
Value chain is an entire set of activities that enables value through the provision of a product or service.

Although the word 'chain' implies a sequence of tightly connected links, it is important to remember that the value chain activities are not always performed sequentially. The scope and order of these activities may vary depending on the product and service architecture and organizational context. It is therefore more practical to picture the product and service management activities as a set of stepping stones, as shown in Figure 4.2.

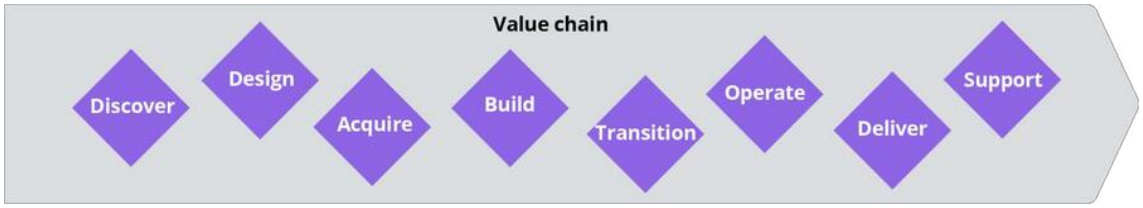


Figure 4.2 Product and service management activities: a chain of stepping stones

An organization's purpose and operating model define the product and service management activities that the organization can perform. Additionally, different products and services may be managed through their lifecycle by one or several organizations. Although these variations are numerous, they form several common patterns described in Section 5.4.

Context-specific combinations of the management activities within the organization's value chain form product and service value streams.

Value stream
Value stream is a series of steps an organization uses to create and deliver products and services to a service consumer.

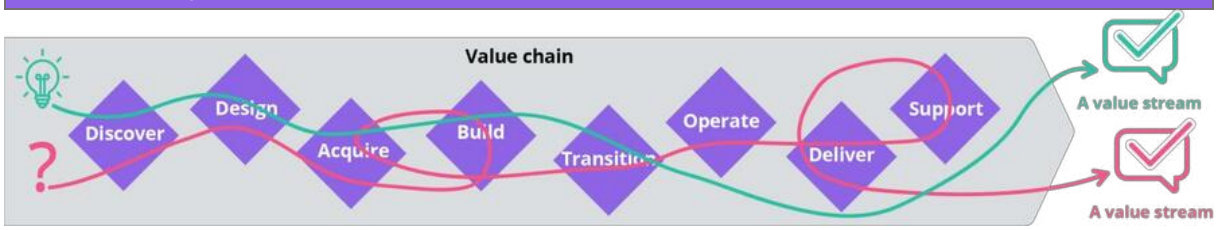


Figure 4.3 Examples of value streams

Identification, mapping, and improvement of value streams are described in Chapter 6 of this book.

Sections 4.2-4.9 describe individual product and service management activities.

ITIL Car Rental | External challenges and internal capabilities'



Alex: ITIL Car Rental has always been in line with technological innovations in our industry. Our current fleet includes car-sharing, electric cars, and traditional cars. However, analytical reports show that the next step for car rental companies (and the future of transportation) is driverless cars. Despite this trend, I feel that adopting this technology at this stage presents significant economic and technological challenges for our company and comes with a load of heavy administrative constraints. So, I believe that ITIL Car Rental is not yet ready for this innovation.



Max: I agree with you up to a point, Alex. However, our research has shown that many manufacturers of autonomous vehicles have been testing their solutions and are currently looking for partners among car rental companies. They are fully taking on the technical and administrative challenges and are looking for self-managed partners for possible cooperation. This would give our company the innovation it needs for further growth, with less investment from our side. I suggest we investigate this further.

4.2 Discover

4.2.1 Introduction to the 'discover' activity

Organizations need to understand and continually review their positioning, vision, and strategy to maintain an effective product and service portfolio. To achieve this, organizations analyse the business context, including Political, Economic, Social, Technological, Legal, and Environmental factors (collectively known as PESTLE). Discoveries made at this level influence the organization's product and service portfolios, which, in turn, define requirements for individual products and services.

The 'discover' activity is performed at three levels:

- **Organizational level:** to understand the organization's positioning, vision, and strategy, and target consumers.
- **Portfolio level:** to optimize the product and service portfolio and ensure its strategic alignment.
- **Product level:** to ensure continual alignment of the product capabilities and related service offerings with the needs of service consumers and the organizational strategy.

These three levels can be tightly integrated, especially when the organization's business is based on a small number of digital products. In other organizations, the three levels may be performed at different organizational levels and structured as a cascade of orientation and prioritization. The organizational and portfolio discovery levels are discussed in the ITIL Digital Strategy Official Book. In the context of the ITIL Product and Service Lifecycle, the 'discover' activity is performed at the product level, as described below.

The purpose of the 'discover' activity is to ensure continual alignment of the product roadmaps and related service offerings with the needs of service consumers and with the organizational strategy.

'Discover' is a continual activity, rather than a one-off exercise or one based on long intervals. It involves continual monitoring of the relevant consumer insights, organizational strategy, technology and teams' capabilities, and, if applicable, competitors. Once important changes or trends in these factors are identified, product teams decide on the best way to address them. The key outputs of this activity include an updated product roadmap, product and service improvement initiatives, as well as requirements and problem statements for product and service design.

4.2.2 How the 'discover' activity is performed

The high-level workflow of each 'discover' iteration comprises four steps:

- Assess the product and service context.
- Agree direction and objectives.
- Prioritize actions and allocate resources.
- Communicate changes in the product and service roadmap.

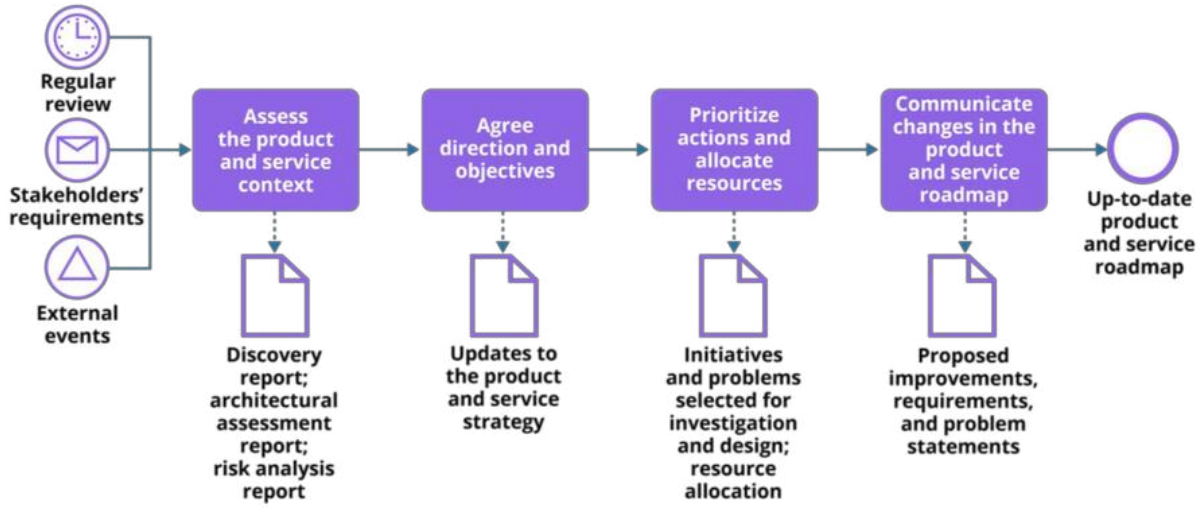


Figure 4.4 High-level workflow of the 'discover' activity

To adapt to the fast changes of the PESTLE context and the needs of consumers, organizations should be able to perform the 'discover' activity in frequent small iterations, adjusting the plans and related funding. Delays and lack of agility at this may become a source of unacceptable constraints at the other lifecycle stages and eventually cause a strategic failure of the organization.

Although the product team may have a schedule of regular (frequent) 'discover' iterations, the activity should also be triggered by significant external events affecting one or more of the PESTLE factors. It also may be conducted upon a request from relevant stakeholders (customers, shareholders, or the governing body of the organization).

In organizations that do not have multi-disciplinary product teams, the 'discover' activity is performed by service owners, business (or customer) relationship managers, and business analysts.

The outputs of the 'discover' activity serve as an important input to other activities of product and service management, ensuring strategic alignment at all stages of the Product and Service Lifecycle.

Many management practices contribute to the 'discover' activity. Key practices include architecture management, risk management, relationship management, and continual improvement. A full list of the involved management practices and their role in the 'discover' activity can be found in the Appendix B.

Table 4.1 summarizes the key facts about the 'discover' activity.

Table 4.1 Key facts about the 'discover' activity

Activity	Discover
Why do we do it?	To ensure continual alignment of the product capabilities and related service offerings with the needs of service consumers and with the organizational strategy.
Who does it?	• Product teams and/or relationship managers. • Business analysts. • Service owners.
When is it performed?	As frequently as needed, triggered by schedule, changes in the product context, or by stakeholder requests.
What are the key outputs?	Updated product and service roadmap.
What are the key metrics of success?	• Strategic fit of the organization's products and service offerings. • Market relevance of the products and service offerings. • Stakeholder satisfaction with products and service offerings. • Commercial success of the products (if applicable).

ITIL Car Rental | ‘Discover’ activity

In line with its strategy for innovation, the company decided to invest in driverless cars, partnering with one of the major automotive companies with a ready driverless car solution. As a result, ITIL Car Rental does not need to invest in developing sensors, radars, meters, and so on. Now that the solution is ready, ITIL Car Rental wants to be among the first rental companies to offer their customers this new and exciting service. However, it will require seamless integration with the company’s own IT systems, user-facing apps, fleet management, charging stations, and more, to ensure the best customer experience while maintaining the highest possible safety standards and complying with applicable local car rental regulations. Due to regulatory constraints across European countries, major American cities have been selected for piloting this new offering. It is expected, though, that as technology emerges, appropriate regulations will be introduced in European countries and other markets where the company operates. The company wants to be ready, so that when it is legally possible, it can be the pioneer of this service in new markets.



Anna: Our stakeholders have been urging us to include driverless cars as part of our innovation programme. Marketing research shows growing interest in driverless cars among both our existing and potential customers. I suggest we prioritize evaluating an autonomous rental service initiative, especially as some of our competitors have already announced plans to launch driverless car services soon.



Maria: I have started mapping customer concerns about driverless cars. Initial findings show interest but highlight concerns around safety, control, and accountability. We will also need to evaluate the readiness of fleet operations and assess the support team’s capabilities to ensure a smooth rollout.



Max: Since we have implemented several new AI products at ITIL Car Rental, our objective is to assess whether these platforms can support real-time data exchange, fleet-level automation, and multilingual AI-driven support.



Anna: Our objective is a safe, reliable, eco-conscious, and fully supported driverless rental experience.

4.3 Design

4.3.1 Introduction to the 'design' activity



The purpose of the 'design' activity is to create prototypes and specifications for products and services, detailing their functionality, user experience, and operational framework.

Product and service design is a dynamic activity that involves:

- creating new ideas
- adapting to changes
- generating solutions.

Digital product and service design aims to use technology and other resources of an organization to create specifications and prototypes of products or services. It focuses on meeting or predicting stakeholders' needs in terms of functionality, performance, experience, and value.



Product/service specification
Product/service specification is a detailed document that outlines critical aspects, requirements, and characteristics of a product or service to be built. It typically includes descriptions of the product or service features, functionalities, technical requirements, performance criteria, and user interface details.

Product/service prototype
Product/service prototype is an initial creation of a product or service that demonstrates its basic form, functionality, and operational capabilities. It is used to test and refine the product or service design and functionality and test hypotheses. Prototypes vary in complexity and purpose, ranging from visual mockups to fully functional models.

Depending on the agreed positioning, strategy, and portfolio, organizations may be more proactive or more reactive in their approach to product and service design. Commercial and other market-oriented organizations (including charities and government organizations) tend to be more proactive and design products and services to meet the anticipated or emerging needs of the customers. Internal service providers are more likely to focus primarily on the well-articulated requirements of their internal and external customers. These common trends are not, however, universal rules and there are exceptions among both commercial and internal service providers.

Digital product design should always include designing the future service interactions and service experience, so it is in fact 'digital product and service design'. Service interactions may be limited to accessing a product interface or include joint service actions performed by users and service provider representatives. In digital service management, transfer of goods is a rare but possible form of service interaction. If the designed service includes transfer of goods, respective activities and touchpoints should also be carefully designed.

4.3.2 Human-centred design

A common approach to design, increasingly adopted by digital product designers, is known as Human-Centred Design (HCD). HCD is a problem-solving approach that prioritizes the needs, experiences, and perspectives of the people for whom a solution is being designed. HCD is rooted in empathy and iterative processes and places a strong emphasis on the end-user throughout the entire design journey. HCD is guided by several fundamental principles:

- early and continuous focus on users and their tasks
- active involvement of users throughout the design process
- iterative design and evaluation
- consideration of the entire user experience
- inclusion of multidisciplinary skills and perspectives[6].

Adoption of the HCD approach requires a close integration of product development and service management. Product design is not complete without designing the related service(s); service design is difficult and ineffective if performed outside of the product design context. If an organization has separate teams for product development and service management, it is vital that both teams are involved in the product and service design.

4.3.3 How the 'design' activity is performed

The high-level workflow of the 'design' activity comprises four steps:

- Analyse product and service demand.
- Plan design activities.
- Execute design plan.
- Communicate solution design.

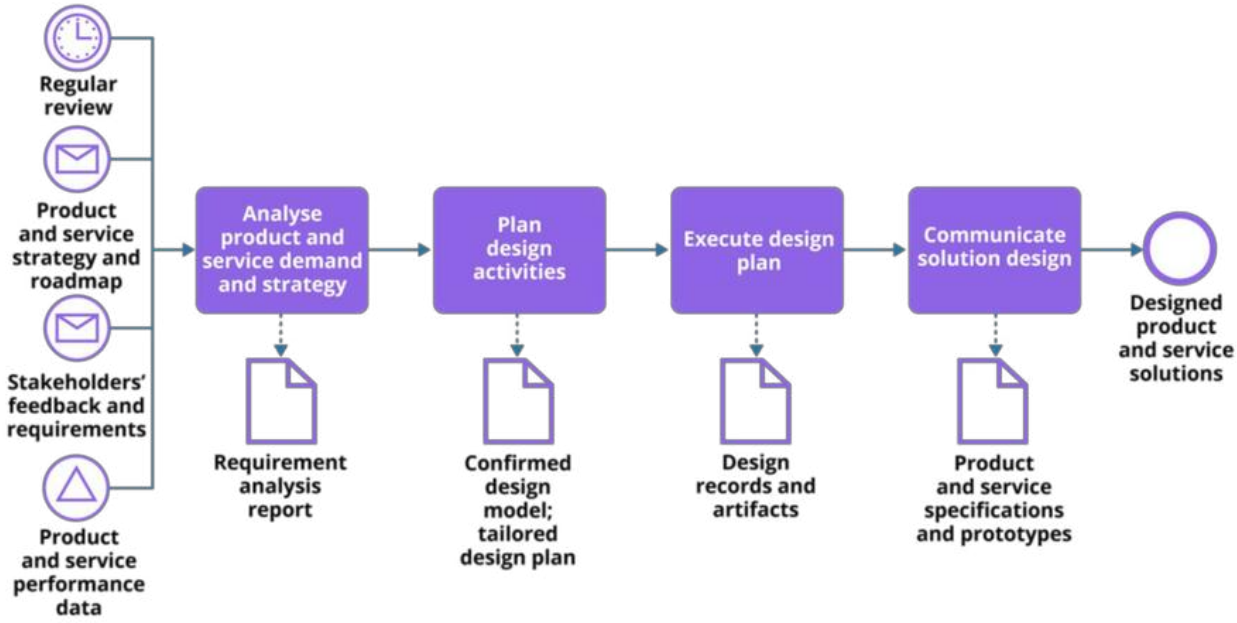


Figure 4.5 High-level workflow of the 'design' activity

Design iterations can be performed regularly according to a schedule, but this approach introduces the risk of delayed response to the changing product roadmap or external events. It is therefore recommended to initiate design in response to changes in the product roadmap or to deviations in the product and service performance. Another important trigger for design is feedback from the acquire, build, or transition activities, indicating that the current design is not optimal and needs to be reviewed.

In some cases, product and service discovery and design are closely integrated, with multiple ideas being analysed, specified, and prototyped to identify the preferred direction of the product development.

Some organizations have dedicated product or service design teams and specialized roles such as 'service designer'. Although this approach offers higher consistency and control, it often leads

to reduced flexibility, poor collaboration, decreased level of innovation and creativity, and increased time and cost of progressing from ideas to working solutions. These effects are unacceptable for many organizations. To prevent them, organizations have been adopting multi-disciplinary product teams, as described in Section 2.2.

The outputs of the 'design' activity serve as an important input to all subsequent activities of product and service management. They define requirements and guidelines for resource allocation, development and integration, testing, operations, delivery, and support.

Many management practices contribute to the 'design' activity. Key practices include business analysis and service design. A full list of the involved management practices and their role in the 'design' activity can be found in the Appendix B.

Table 4.2 summarizes the key facts about the 'design' activity.

Table 4.2 Key facts about the 'design' activity

Activity	Design
Why do we do it?	To create prototypes and specifications for products and services, detailing their functionality, user experience, and operational framework.
Who does it?	Product teams; in some cases, specialized design teams.
When is it performed?	As frequently as needed, triggered by: • schedule • changes in the product strategy • stakeholder feedback • deviations in the product performance.
What are the key outputs?	Product and service specifications and prototypes.
What are the key metrics of success?	• Quality of the product specifications and prototypes. • Design cycle time. • Adherence to the product roadmap and other relevant guidelines. • Stakeholder satisfaction with the 'design' activities.

ITIL Car Rental | 'Design' activity

With a clear sense of customer expectations and stakeholder priorities, the team turned their attention to designing a solution that would make autonomous rentals intuitive, safe, and scalable.



Anna: Since our customers are happy with the current app, we will integrate it with the partner's autonomous electric vehicles. Thus, our customers will be able to choose between our existing car-sharing services or a driverless car. We will provide different mobility solutions, depending on the customer's location and availability.



Maria: I am mapping design requirements throughout all service areas. So far, there are a few changes to our existing features. We will no longer need our AI-based damage detection nor smart-fuel-level tracking, since our cars will be fully electric. Instead, we will now take full responsibility for any accidental external damage that may occur during the customer journey, and we will provide a drop-off-anywhere feature, instead of requiring return to a designated charging bay. This should give more freedom and flexibility to our customers.



Alex: Our solution should, therefore, support real-time sensor data, make way for seamless integration, ensure multilingual interfaces, and automate variable workflows within the driverless car rental value stream.



Maria: We also need to define possible risks, such as our competitors introducing driverless cars before us, or the government changing regulations, or even a possible incident that would deter our customers from using driverless cars.



Omar: We need to prototype and test the new journey, from booking to drop-off and billing, to be able to assess possible issues.



Anna: What we are after is a seamless, intelligent, and safe experience, not just while driving but throughout the entire experience. It should be supported by intelligent services and designed with the customer at the heart of every interaction.

4.4 Acquire

4.4.1 Introduction to the 'acquire' activity

The purpose of the 'acquire' activity is to secure and allocate necessary resources efficiently, ensuring the sustainability and scalability of products and services.

Digital products are combinations of the organization's technology resources, including those the organization accesses by consuming external services. Resources are also needed for the ongoing product operations, service delivery, and support. To ensure the quality and scalability of their products and services, organizations need to have sufficient resources, and sufficient elasticity in scaling up and down following demand changes.

To acquire resources or services from an external supplier, organizations need to identify, select, and onboard the supplier. They must also ensure that the relationships between the two organizations, and the quality of the resources and services sourced by the supplier, meet the organization's requirements and comply with the applicable policies and regulations.

Apart from effective sourcing and procurement, the 'acquire' activity may involve identifying and reallocating technology resources within the organization. This includes securing resources for a particular product or service, either from an internally available resource pool or by reallocating them from another product or service.

4.4.2 How the 'acquire' activity is performed

The 'acquire' activity comprises five steps:

- Analyse requirements for resources or services.
- Assess sourcing options.
- Agree terms and conditions.
- Procure resources or services.
- Communicate resource or service availability to requestor.

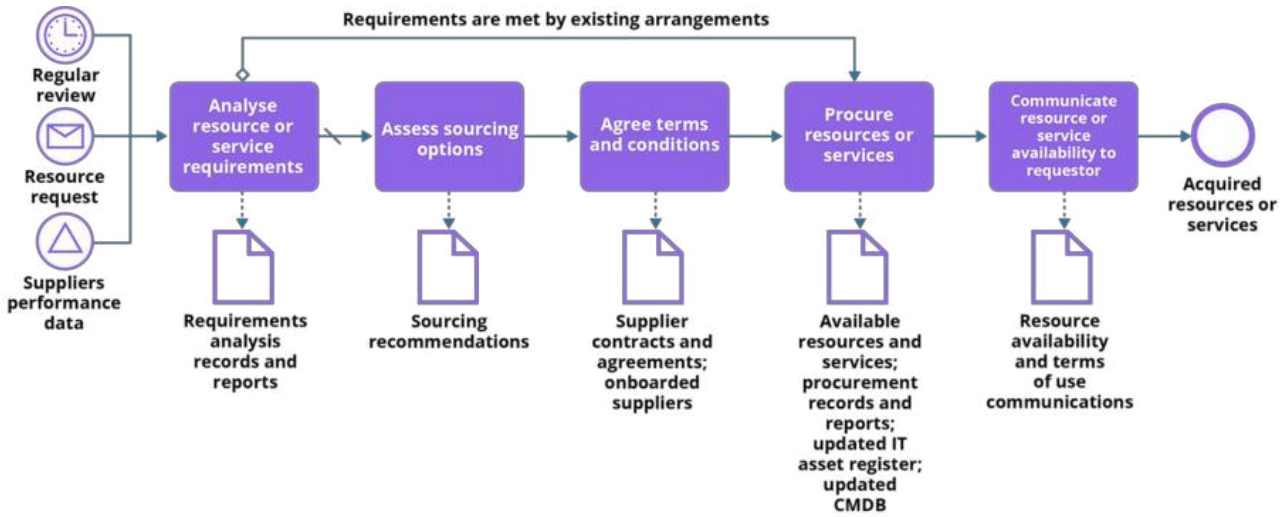


Figure 4.6 High-level workflow of the 'acquire' activity

The 'acquire' activity is often performed by a dedicated procurement team, with budgets controlled by business teams, product teams, project teams, or specialized technology teams.

This variety of responsible teams often causes confusion and may lead to extra costs, delays in the procurement and onboarding activities, and suboptimal quality of the acquired resources and services. Clear allocation of the costs of resources and services to the organization's products allows responsibility for budgets to be assigned to the product teams and helps streamline procurement activities.

The 'acquire' iterations are usually triggered by requests for new resources or external services. Requests for additional resources or services may originate from any stage of the Product and Service Lifecycle. Additional resources might be needed to create a new or changed product or to maintain ongoing product operations and service delivery. The 'acquire' activity can also be performed regularly (as supplier contracts and agreements normally have a review cycle) or triggered by unexpected performance of a supplier or an external service.

In some cases, existing arrangements with suppliers do not meet the new resource requirements. When this happens, sourcing options must be assessed, and new contracts or agreements need to be arranged. Once this process is complete, or if existing arrangements are sufficient, the required resources are procured and registered. This is done in accordance with the organization's asset management, accounting, and other relevant policies. After the resources are registered, requesters are informed about their availability. They also receive details about the terms of access and use.

When the 'acquire' activity is performed to re-allocate existing resources within the organization, the key steps remain the same, but the level of formality is typically low, as no legal contracts or agreements may be needed.

In highly automated environments, some resources required for products to be built and tested are allocated and configured automatically or semi-automatically. This improves the cycle time of the 'acquire' activity significantly. Examples include allocation and configuration of computational resources, virtual environments, and various templates and pre-built standard configurations.

The key outputs of the 'acquire' activity serve as inputs to the build and transition activities: the acquired resources and services are either used to build new or changed products, or transitioned to the live environment to be used in the operate, deliver, or support activities.

Several management practices contribute to the 'acquire' activity. Key practices include supplier management, service financial management, and IT asset management. A full list of the involved management practices and their role in the 'acquire' activity can be found in the Appendix B.

Table 4.3 summarizes the key facts about the 'acquire' activity.

Table 4.3 Key facts about the 'acquire' activity

Activity	Acquire
Why do we do it?	To secure and allocate necessary resources efficiently, ensuring the sustainability and scalability of products and services.
Who does it?	Specialized procurement teams in collaboration with product teams, project teams, and other stakeholders.
When is it performed?	• As frequently as needed, when triggered by request for additional resources. • Regularly, according to contract review and budgeting cycles.
What are the key outputs?	Acquired resources and services.
What are the key metrics of success?	• Quality of the resources and services. • Acquire cycle time. • Adherence to the product roadmap and other relevant guidelines. • Stakeholder satisfaction with the 'acquire' activity, timelines, and acquired resources.

ITIL Car Rental | 'Acquire' activity

As design specifications took shape, it became clear that new capabilities would be needed, both internally and from trusted partners. The next step was to secure the right resources through the 'acquire' activity.



Anna: Since we are integrating user-facing and fleet management solutions with a well-developed autonomous car system from our automotive partner, we need to ensure that our lead management system has sufficient capacity to track the new autonomous cars.



Maria: We do not need our own cloud infrastructure; we just need to integrate it into the booking app. However, we do require additional cloud capacity and a reliable cloud partner.



Omar: The cars are charged at our stations, but we need to partner with additional charging station providers to avoid having to return cars to the garage for charging. This will require a contract with a technology partner, expansion of our cloud capacity, and agreements with one or more charging station providers.

4.5 Build

4.5.1 Introduction to the 'build' activity



The purpose of the 'build' activity is to develop, integrate, and test digital products, transforming designs into functional solutions.

Digital products are a combination of an organization's resources based on digital technology and designed to offer value to consumers. Once the resources are acquired and available, organizations use them to build products. Depending on the product architecture, the 'build' activity may involve software development, system integration, infrastructure and platform configuration, process development, and so on. This typically includes development or update of the relevant solution documentation, such as transition, operation, delivery, and support manuals. The 'build' activity also includes validation and testing of the product components and products being built.



Validation
Validation is the activity of confirming that the proposed product and service design meets agreed requirements and establishing acceptance criteria for the next lifecycle stage.

Testing
Testing is the activity in which a system or component is executed under specified conditions, the results are observed or recorded, and an evaluation of some aspect or component of the system is made.

The *ITIL Service Validation and Testing (Version 5)* Official Practice guide provides practical guidance on various types of testing at different stages of the Product and Service Lifecycle.

In some cases, product design includes design of the service delivery capabilities. This means that new teams, roles, and work instructions may be created and tested at the 'build' stage of the Product and Service Lifecycle. This means that organizational changes may be supported by the 'build' activity.

When an iteration of a product design is complete, the product team assesses the design and plans the building and testing activities. The plans estimate the required resources. If the resources are not available, a request for additional resources is created (and processed as described in the 'acquire' activity above). When the resources' availability is confirmed, the building and testing activities are performed as planned. The products that are built and tested (along with the supporting documentation) are then shipped for transition, either to the organization's live environment or a marketplace, or to a service consumer.

4.5.2 How the 'build' activity is performed

There are four steps in the 'build' activity:

- Assess solution design.
- Plan building and testing and confirm resource availability.
- Execute building and testing plans.
- Deliver solutions and supporting documentation.

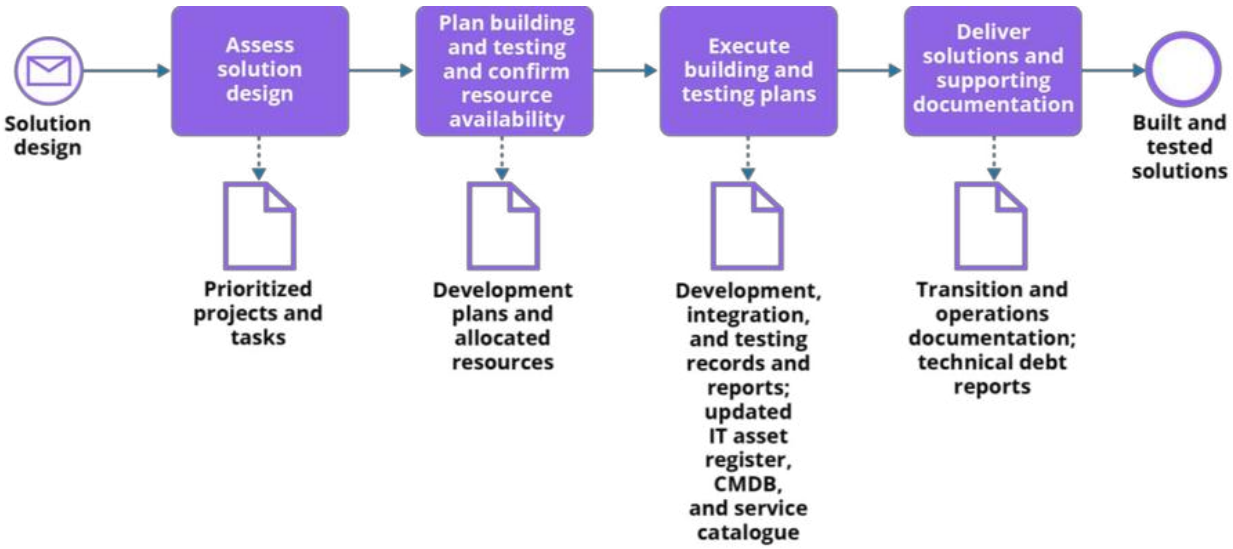


Figure 4.7 High-level workflow of the 'build' activity

The 'build' iterations are triggered by solution designs (approved specifications and prototypes). The key outputs of the 'build' activity serve as input to the 'transition' activity: the built products are then transitioned to the live environment.

Depending on the organizational design, the 'build' activity is performed either by multi-disciplinary product teams, or by specialized teams of software developers, infrastructure engineers, and testers. The latter approach usually means longer building and testing cycles, communication issues, and unclear responsibility. To mitigate these risks, organizations may involve project management techniques and create a temporary project management team. The project approach to creation of digital products implies that the activities performed and the team are temporary. This does not reflect the continual nature of the digital product and service improvement lifecycle and the need for an ongoing engagement and ownership. Therefore, the recommended approach is to organize multi-disciplinary product teams, as described in Section 2.2.

The 'build' activity can and should be highly automated, enabling continuous integration.

Continuous integration
Continuous integration is a set of techniques and tools that enables developers to frequently merge their code changes into a central repository, followed by automated builds and tests.

This process helps ensure that the codebase remains stable and functional by catching integration errors early.

A possible level of automation depends on the level of product digitization: the higher the share of digital components in the product solution, the bigger the automation opportunities. At the same time, organizations dealing with legacy systems and physical infrastructure may need to employ manual ways of integration, configuration, and testing during the 'build' activity.

Several management practices contribute to the 'build' activity. Key practices include software development and management, infrastructure and platform management, and service validation and testing. A full list of the involved management practices and their role in the 'build' activity can be found in the Appendix B.

Table 4.4 summarizes the key facts about the 'build' activity.

Table 4.4 Key facts about the 'build' activity

Activity	Build
Why do we do it?	To develop, integrate, and test digital products, transforming designs into functional solutions.
Who does it?	Product teams or specialized software development, infrastructure engineering, and testing teams or project teams formed of the above.
When is it performed?	As frequently as needed, triggered by solution designs (subject to resource availability).
What are the key outputs?	Built and tested product and service solutions.
What are the key metrics of success?	• Quality of the product solutions. • Building cycle. • Adherence to the product roadmap and other relevant guidelines. • Stakeholder satisfaction with the product solutions.

ITIL Car Rental | 'Build' activity

With critical resources in place, from AI platforms to supplier partnerships, the team moved into the 'build' activity, where design would become reality.



Sam: Since the partner is developing their solution for broad integration, they are using an open architecture and a standard API. To create the integration, we needed minimal consultation; our team developed the solution independently.



Anna: With the solution design approved and the supplier of our driverless vehicles onboarded, we will now enter the building and testing phase. This includes developing mobile app interfaces, integrating AI services, and preparing operational documentation.



Maria: I have confirmed resource requirements as stated in our build plan. What we have for now is sufficient for this stage.



Max: Testing has been completed. Using standard interfaces allows for seamless updates without interruption of service.



Omar: While testing our app in the internal environment, we encountered several issues. After a trip is planned and the price confirmed, any changes, such as those caused by traffic or alternative routes, are currently affecting the price. In our existing car-sharing service, the customer chooses the route and any changes are reflected in the final cost. However, with driverless cars, route selection is fully managed by us and we are responsible for providing an optimal route at the agreed price. Therefore, any route changes not initiated by the customer should not impact the journey's cost. We must return to the design stage to revise the price calculation rules and then test it again.

4.6 Transition

4.6.1 Introduction to the 'transition' activity



The purpose of the 'transition' activity is to seamlessly introduce new or updated products into operational environments and to ensure effective onboarding/offboarding of suppliers.

Built solutions and some acquired resources need to be safely and efficiently transitioned in a live environment. Depending on the product architecture, this may be an organization's live environment, a service consumer's live environment, or a marketplace.

Based on the product and service architecture, transition may require a planned interruption of ongoing operations and service delivery. Modern digital products are designed for smooth transitions and version updates, minimizing or eliminating any negative impact on service availability. However, many organizations still manage numerous legacy products. In such cases, every significant transition may demand thorough and careful planning.

When the 'acquire' activity leads to new service contracts with external suppliers, onboarding may be required. This is especially important when suppliers are involved in product operations, service delivery, or product and service support. Onboarding suppliers is also considered a form of transition. It can occur as part of a larger transition project or as an independent activity. Similarly, off-boarding suppliers and decommissioning specific resources or entire products are also forms of transition.

Transition includes ensuring that the new or updated products are integrated into the live environment and are ready for product operation and service delivery. This includes monitoring, event management, continuity and security testing, and other controls to ensure the state of the transitioned products, services, and resources is known and managed.

4.6.2 How the 'transition' activity is performed

The four steps of the 'transition' activity are:

- Assess solutions and transition requirements.
- Plan transition activities and confirm resource availability.
- Execute transition plans.
- Communicate transition results to stakeholders.

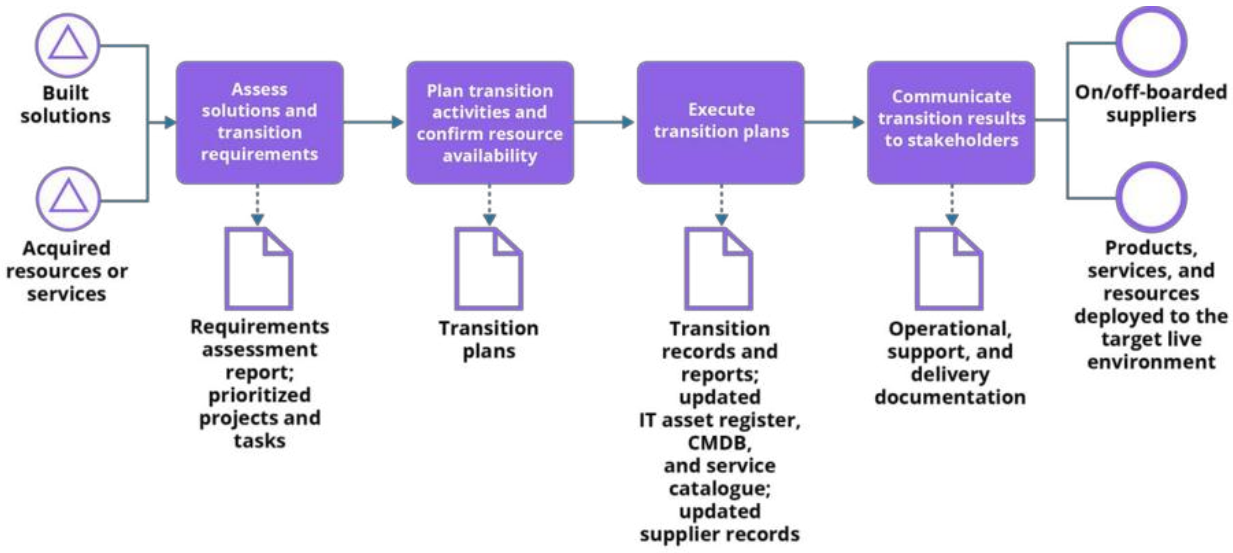


Figure 4.8 High-level workflow of the 'transition' activity

The 'transition' iterations are triggered by built product solutions or by acquired resources and services. The key outputs of the 'transition' activity serve as input to the 'operate, 'deliver', and 'support' activities: the transitioned **products** are then operated, enabling service delivery; transitioned **resources** are used for product operation, service delivery, or product and service support.

The transition activity results in new or updated products and components deployed to the live environment. Depending on the product and service architecture, it may also make the new or updated services being available to users.

Deployment
Deployment is the movement of any service component into a controlled environment.

Release
Release is a version of a product, service, or other configuration item, or a collection of configuration items, that is made available for use.

In some cases, deployment and release are performed simultaneously. In others, services are made available to users later, as part of the 'deliver' activity.

In a digital product environment, the 'transition' activity may be highly or fully automated, allowing for many product or component updates to be deployed in a short timeframe. Complementing the continual integration method, this may involve continuous delivery and/or continuous deployment.

Continuous delivery
Continuous delivery is a set of techniques and tools that enables software updates to be deployed to production at any time. Frequent deployments are possible, but deployment decisions are taken case by case, usually because organizations prefer a slower rate of deployment.

Continuous deployment
Continuous deployment is a set of techniques and tools that enables every change that passes automated tests to be automatically deployed to production

without additional authorization. Continuous deployment relies on continuous delivery.

When the 'transition' activity cannot be fully automated, it may involve substantial planning and manual implementation of technical and organizational changes. In such cases, transition may be performed by product teams or involve specialized teams. These may include infrastructure management, supplier management, HR, operations and support teams, and others, depending on the scope of the transition. In larger and more complex cases, transition may be organized as a project.

Several management practices contribute to the 'transition' activity. Key practices include software development and management, infrastructure and platform management, release management, and deployment management. A full list of the involved management practices and their role in the 'transition' activity can be found in Appendix X.

Table 4.5 summarizes the key facts about the 'transition' activity.

Table 4.5 Key facts about the 'transition' activity

Activity	Transition
Why do we do it?	• To seamlessly introduce new or updated products into operational environments. • To ensure effective onboarding/offboarding of suppliers.
Who does it?	• Product teams. • Specialized software development, infrastructure engineering, operations, support, and other relevant teams. • Project teams formed of the above.
When is it performed?	• As frequently as needed, triggered by built solutions or acquired resources and services (subject to the organization's deployment policies and guidelines).
What are the key outputs?	• Products, services, and resources deployed to the target live environment and ready for operation. • Onboarded/offboarded suppliers.
What are the key metrics of success?	• Transition cycle (timeliness and duration). • Negative impact of transition on service availability and performance. • Number and impact of transition errors. • Adherence to the product roadmap and other relevant guidelines. • Stakeholder satisfaction with the transition process and results.

ITIL Car Rental | 'Transition' activity

Once tested and refined, the new services were ready to meet the real world. The 'transition' activity would ensure smooth rollout into live operations.



Anna: We are ready to start field testing of our services. Autonomous cars have been received and set up. The updated app is available for testing. This phase must go smoothly to avoid any negative impact on our customers.



Max: After successful field testing, the new app has been made available to a group of customers participating in our BETA testing programme.



Omar: We are running training workshops for our support agents to ensure that autonomous car users receive the best customer support they expect. The product team monitors all support requests coming from pilot users to identify and implement service improvements.



Anna: We are working closely with our marketing department to create awareness of the new service.

4.7 Operate

4.7.1 Introduction to the 'operate' activity

The purpose of the 'operate' activity is to maintain and monitor digital products and supporting systems, ensuring optimal performance and reliability.

Products transitioned to the live environment need to be operated. This includes running the technology platforms and systems, ensuring systems performance and availability, performing routine tests (including testing of continuity and security measures), backups, and monitoring, capturing and processing events, and so on. The 'operate' activity ensures that products and components operate as designed and in line with the organization's commitments to stakeholders.

This activity also ensures that live products and services comply with relevant policies and guidelines. This includes, but is not limited to, testing service continuity measures and information security controls, renewing security certificates, and updating licenses. These activities are usually scheduled, though they may be triggered by changes in regulations or by relevant events.

The 'operate' activity is normally invisible to customers and users, except in those cases when it affects service availability or performance. Such cases should be avoided: normal operations of products should not negatively affect service delivery. At the same time, lack of the operational activities required by the product design is likely to cause service disruptions. Effective product operation is a key factor of service reliability.



Reliability
Reliability is the ability of a product, service, or other configuration item to perform its intended function for a specified period of time or number of cycles.

The exact scope of the 'operate' activity for a particular product depends on the product architecture and design. Modern digital products are often designed for highly automated operation. Legacy systems may require manual maintenance. However, if a modern product includes hardware (servers, computers, tablets, payment terminals, IoT devices, and so on), the 'operate' activity is likely to involve manual or semi-automated checks, tests, minor updates, and maintenance. An important trend in digital product operations is the shift from reactive to proactive approach and to closer integration with other stages of the ITIL Product and Service Lifecycle. To address the need for proactive operations, organizations adopt site reliability engineering.



Site Reliability Engineering (SRE)
Site Reliability Engineering (SRE) is a technology management discipline that incorporates aspects of software engineering and applies them to infrastructure and operations problems with the goal of creating ultra-scalable and highly reliable software systems.

To effectively operate digital products, organizations need to understand their past, current, and predicted state. In the constantly changing complicated technology environments, this requires a new level of product observability.



Observability
Observability is the ability to understand the internal state of a complicated system by analysing its external outputs, such as metrics, logs, and traces.

Adoption of the SRE and the observability approach allows to gain deep insights into system behaviour, enabling product teams to identify risks quickly, optimize performance, and improve reliability. However, to implement these approaches to product operations, the products and supporting platforms should be designed for observability and reliability.

4.7.2 How the 'operate' activity is performed

Effective and proactive product operation requires close team collaboration from 'discover' to 'operate', which can sometimes be achieved by establishing multi-disciplinary teams involved at all stages of the Lifecycle. However, this is not always possible: first, some products are operated by organizations that were not involved in product design (for example, customer organizations). Second, at the operational stage of the Lifecycle, digital products are integrated into a wider technology landscape, with multiple cross-product interactions that cannot be fully controlled by one product team.

To address these challenges, many organizations establish dedicated SRE teams (or adopt SRE approaches within the existing IT operations teams). This helps address complexities but requires effective collaboration with multiple product teams. The IT operations and/or SRE teams should be involved in the 'design' and 'transition' activities to ensure visibility and knowledge transfer, and to enable early feedback loops.

Regardless of the exact scope, the 'operate' activity comprises three steps:

- Assess transitioned solutions and operational requirements.
- Plan operations activities and confirm resource availability.
- Execute operational plans, report operational status to stakeholders.

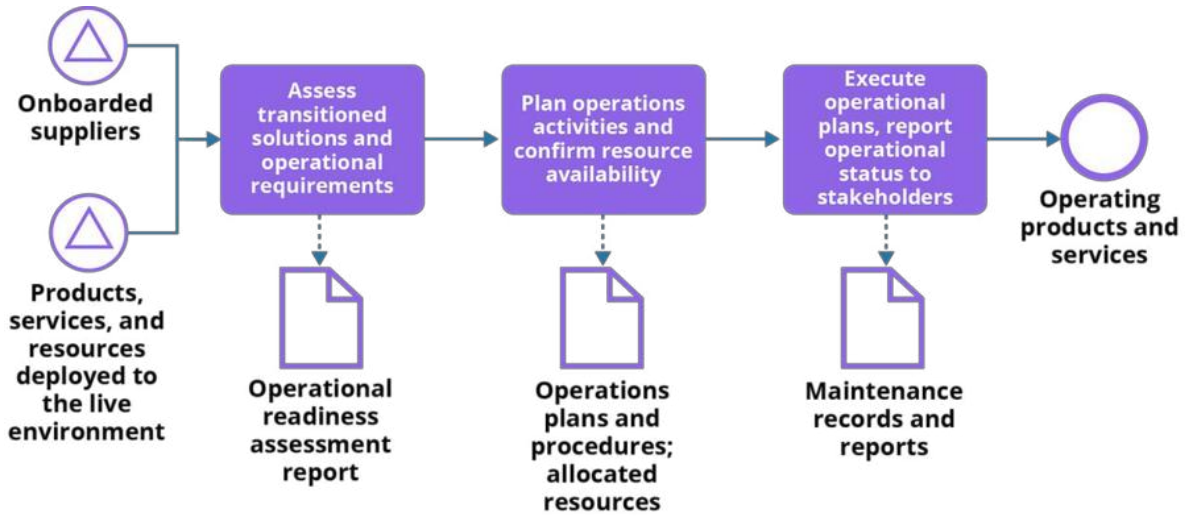


Figure 4.9 High-level workflow of the 'operate' activity

The transitioned products and resources are assessed to ensure they meet the agreed requirements. The operational activities are usually agreed at the 'design' stage and tested at the 'build' and 'transition' stages of the Product and Service Lifecycle. However, scheduling the required manual work and setting up the automated routines may need additional planning and confirmation of resource availability. The confirmed plans are then executed and the operational status of the products is reported to relevant stakeholders. This includes reporting of any outstanding events, incidents, and trends for investigation.

Event
Event is any change of state that has significance for the management of a product, service, or other configuration item.

Incident
Incident is an unplanned interruption to a service or reduction in the quality of a service.

Incidents may be caused by errors in technology, mistakes during management and consumption of services, or by external factors. One common cause of incidents is changes – unauthorised or poorly managed.

Change
Change is the addition, modification, or removal of anything that could have a direct or indirect effect on products and services.

Although a source of disruptions, changes are inevitable. ITIL provides guidance for effective and safe management of changes in the *Change Enablement (Version 5)* Official Practice guide.

The 'operate' iterations are triggered by products deployed to live environment, by transitioned resources and services, or by suppliers onboarded for participation in the 'operate', 'deliver', or 'support' activities. The key outputs of the 'operate' activity serve as input to the 'deliver' and 'support' activities. The operated products enable service delivery; reported deviations in product operation trigger the 'support' activity. Product operations data is a key input to many activities, including 'discover', 'design', 'build', and 'transition'. Modern applications and platforms are designed to provide plenty of live performance data to inform product design, build, and transition.

Several management practices contribute to the 'operate' activity. Key practices include monitoring and event management, and infrastructure and platform management. A full list of the involved management practices and their role in the 'operate' activity can be found in Appendix B.

Table 4.6 summarizes the key facts about the 'operate' activity.

Table 4.6 Key facts about the 'operate' activity

Activity	Operate
Why do we do it?	To maintain and monitor digital products and supporting systems, ensuring optimal performance and reliability.
Who does it?	• Product teams. • IT operations teams. • SRE teams.
When is it performed?	Continually, with new iterations triggered by transitioned solutions, resources, and services, or onboarded suppliers.
What are the key outputs?	• Operating products and services. • Product performance records and reports.
What are the key metrics of success?	• Coverage and effectiveness of monitoring and analysis. • Live products' reliability, performance, and information security. • Number and impact of incidents and performance deviations. • Adherence to the product roadmap and other relevant guidelines. • Stakeholder satisfaction with the product and service operation.

ITIL Car Rental | 'Operate' activity

Following successful transition, the new services are now live and operation procedures are updated. The team is now doing business as usual.



Anna: All systems are up and running, and the new offering is ready to be delivered to customers in the cities where it is now available. You can now see it live in the updated apps.



Omar: Our AI Ops systems provide continuous monitoring of the new service, manage performance and capacity adjustments, and handle event management. We are ready for first customers.

4.8 Deliver

4.8.1 Introduction to the 'deliver' activity



The purpose of the 'deliver' activity is to provide services to users, manage user onboarding/offboarding, maintain service quality standards, and gather consumers' feedback.

Operational products provide the foundation for the delivery of services. The 'deliver' activity is different from the 'operate'. Product operation is focused on maintaining the products in the agreed working state so services **can** be delivered. Service delivery is triggered and defined by service level agreements and focuses on delivering the agreed level of services to users and customers.



Service Level Agreement (SLA)
Service Level Agreement (SLA) is a documented agreement between a service provider and a customer that identifies the services provided and the agreed level of each service.

As described in Section 3.2, service relationships may take three forms: access to resources; exchange of goods; and service actions. The 'deliver' activity includes:

- providing users with access to the agreed product resources (equipment, applications, data, knowledge bases, support channels, and so on)
- providing users with goods transferred as part of the service (non-returnable equipment and supplies, manuals, access keys, and so on)
- performing service actions for and with users (training and support, reporting, consultations, transportation and delivery of resources, and so on).

Even when service delivery activities have no direct touchpoints with users (for example, preparation of laptops for new corporate users includes several steps that are not visible to users and do not involve them), these activities are directly linked to the SLAs, service users, and respective service quality criteria.

The exact scope of the 'deliver' activity for a particular service depends on the product architecture and design and on the service offering and agreement.

4.8.2 How the 'deliver' activity is performed

Many application-based digital products are designed for easy and intuitive access to the application (and via the application to other product resources), with no need for transfer of goods or service actions (except user support actions). Other services include a range of ongoing service actions and transfer of goods to users. Product architecture defines the need for and the scope of the 'deliver' activity, and the need for dedicated teams. Sometimes the only form of service relationship is access to the product resources: a user installs an app and uses it; no service actions or transfer of goods are expected during normal service delivery and consumption. In this scenario, the 'deliver' activity is limited to monitoring and delivering the service delivery status and user satisfaction. In other situations, especially in a corporate environment, service delivery involves fulfilment of users' service requests, user onboarding, and other service actions (which may include transfer of disposable equipment or supplies).

Service request
Service request is a request from a user or a user's authorized representative that initiates a service action which has been agreed as a normal part of service delivery.

Depending on the scope of these activities, a dedicated team may be required; in many cases, the same team is involved in the 'support' activity.

Regardless of the exact scope, the 'deliver' activity comprises three steps:

- Assess service delivery commitments and available solutions.
- Identify and confirm delivery plan and resource availability.
- Execute delivery plans and report delivery status to stakeholders.

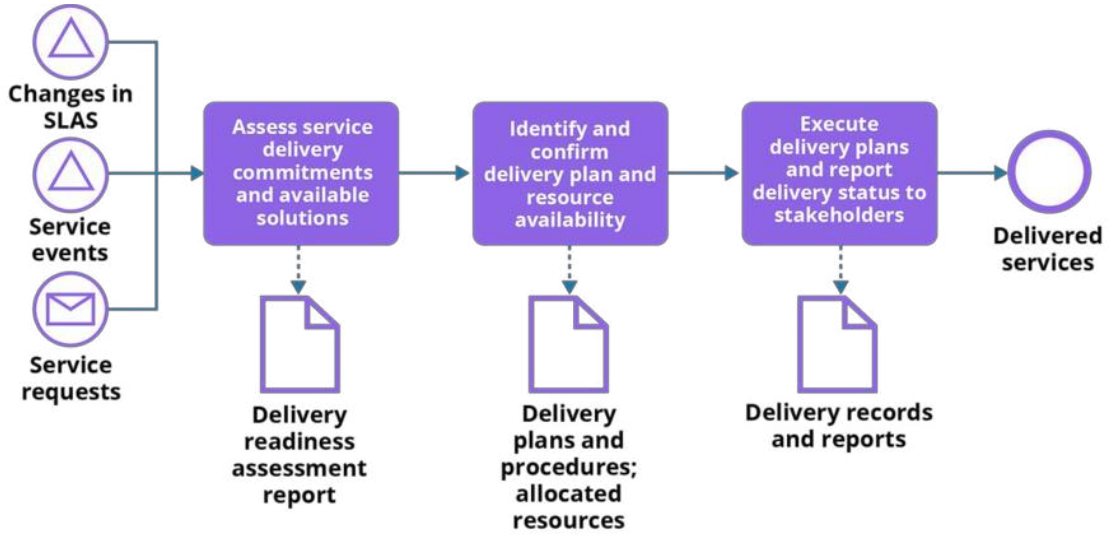


Figure 4.10 High-level workflow of the 'deliver' activity

The 'deliver' iterations are triggered by:

- changes in SLAs (including signing a new SLA)
- service requests submitted by users under existing SLAs
- service events defined in existing SLAs (service actions may be conducted in response to certain events, without a request from the user).

The key output of the 'deliver' activity is the delivered services; other outputs include service performance reports (input to all other activities), incident reports (input to the 'support' activity), improvement initiatives (inputs to the 'discover' and 'design' activities), and others.

Several management practices contribute to the 'deliver' activity. Key practices include service request management and service level management. A full list of the involved management practices and their role in the 'deliver' activity can be found in Appendix B

Table 4.7 summarizes the key facts about the 'deliver' activity.

Table 4.7 Key facts about the 'deliver' activity

Activity	Deliver
Why do we do it?	• To provide services to users. • To manage user onboarding/offboarding. • To maintain service quality standards. • To gather consumers' feedback.
Who does it?	• Product teams.

Activity	Deliver
	• Service delivery teams. • User support teams. • Service desk teams.
When is it performed?	Continually, with new iterations triggered by changes in SLAs, service events, and service requests.
What are the key outputs?	• Delivered services. • Service performance and user feedback records and reports.
What are the key metrics of success?	• Customer and user satisfaction with service quality. • Service performance against the agreed SLA targets. • Adherence to the product and service strategy and other relevant guidelines. • Stakeholder satisfaction with service delivery.

ITIL Car Rental | 'Deliver' activity

Following a successful launch, the focus shifted to delivering the service experience as promised: consistently, reliably, and with minimal friction for users.



Max: We are excited to see the first customers using our autonomous vehicles! After the first week, we received a solid score of 4.95 and the team is celebrating.



Anna: With services live, we are focusing on delivery. This means ensuring that customers can enjoy the new driverless car experience, combined with our familiar and intuitive booking process.



Maria: I have mapped the service delivery flows based on user actions and support data. In most cases, delivery is triggered through the app. Feedback shows that our customers appreciate the convenience of ending their journey at a location of their choice rather than a designated place. Limited drop-off locations used to be one of the requirements gathered from our customers.



Anna: Even though most of the feedback was good (as Max mentioned a score of 4.95 is a win), we do have some negative comments which we can use to improve. One of our customers reported receiving a car that was not in the most presentable condition and he was offered a $10 discount by our support team for a future trip. We need to add an AI algorithm that scans the car after each trip is completed to identify any issues, such as dirty exterior or interior, or forgotten belongings.



Omar: Our database analysis shows that less than 50% of our users are local customers; most are users from out of town. Therefore, instead of offering a discount for a future trip, we should offer a discount on the ride where the incident occurred. We can track most of the incidents through the video cameras installed in the cars.

4.9 Support

4.9.1 Introduction to the 'support' activity



The purpose of the 'support' activity is to identify and resolve incidents, fulfil disaster recovery procedures, and capture consumer's feedback.

Despite best efforts, product operation and service delivery are never incident-free. Technology solutions fail, and so do organizational processes and external services. The scale of failures varies from minor incidents with very limited impact to disasters able to destroy the whole business of the organization.



Disaster
Disaster is a sudden unplanned event that causes great damage or serious loss to an organization. A disaster results in an organization failing to provide critical business functions for some predetermined minimum period of time.

All types of incidents and disasters should be addressed: predicted, prevented from occurring, detected, mitigated, resolved, analysed, and prevented from recurring. Which of these actions the organization will be focusing on depends on the anticipated and actual impact of the incident or disaster as well as on some other internal and external factors. Either way, these aspects are addressed by the 'support' activity.

Although the main focus of the 'support' activity is to minimize the impact of incidents and disasters when they happen, this activity is often associated with the investigation of incidents and identification of errors in products or work processes, also known as problems.



Error
Error is a flaw or vulnerability that may cause incidents.

Problem
Problem is a cause, or potential cause, of one or more incidents.
Known error
Known error is problem that has been analysed but has not been resolved.

4.9.2 Problem investigation and continual improvement

Detection and investigation of errors is often triggered by analysis of incident and operational data, such as repetitive incidents or abnormal events, trends in performance deviations or user queries, and so on. Data analysis and investigation of underlying errors is an important part of the product and service continual improvement. The key management practice that ensures investigation and resolution of errors in digital products is problem management (see Appendix A).

Although often initiated during the 'operate' and 'support' activities, problem management is applied throughout the Product and Service Lifecycle.

Table 4.8 Application of problem management throughout the Product and Service Lifecycle

Product and Service Lifecycle stage	Problem management activities
Discover	• Proactive identification of errors from external sources. • Review of errors identified reactively.

Product and Service Lifecycle stage	Problem management activities
Design	• Design of structural solutions to remove the errors. • Design of workarounds to reduce the impact of errors that cannot be removed.
Acquire	• Acquisition of resources required to apply the designed solutions.
Build	• Building and testing components and products without the identified errors.
Transition	• Transitioning the fixed components and products to live environment. • Communicating workaround recommendations to operation and support teams.
Operate	• Reactive identification of errors based on the operational and support data and feedback. • Application of recommended solutions for known errors.
Deliver	N/A
Support	• Reactive identification of errors based on the operational and support data and feedback. • Application of recommended solutions for known errors.

4.9.3 How the 'support' activity is performed

Like other digital product and service management activities, the 'support' activity can and should be highly automated. Automation and the shift to more proactive operations help to detect and address trends in technology performance early, preventing incidents and reducing the support workload. However, some incidents are detected only when they have already happened. Automated recovery or switch to backup resources help minimize the negative impact of the incidents on users. However, even though such incidents have little or no impact on users, in many cases they still require investigation and structural resolution.

The 'support' activity typically involves multiple teams, including product teams, SRE and IT operation teams, service desk, and other user teams, depending on the support context. It may also involve other specialist teams, especially in case of disasters, major incidents, or information security incidents. A close and effective collaboration between teams is key for successfully implementing the 'support' activity.

Although specific support actions depend on the context of the adverse events, the 'support' activity has three steps:

- Identify and assess incidents and disasters.
- Respond to incidents/disasters and restore normal operations and delivery.
- Review and report support actions.

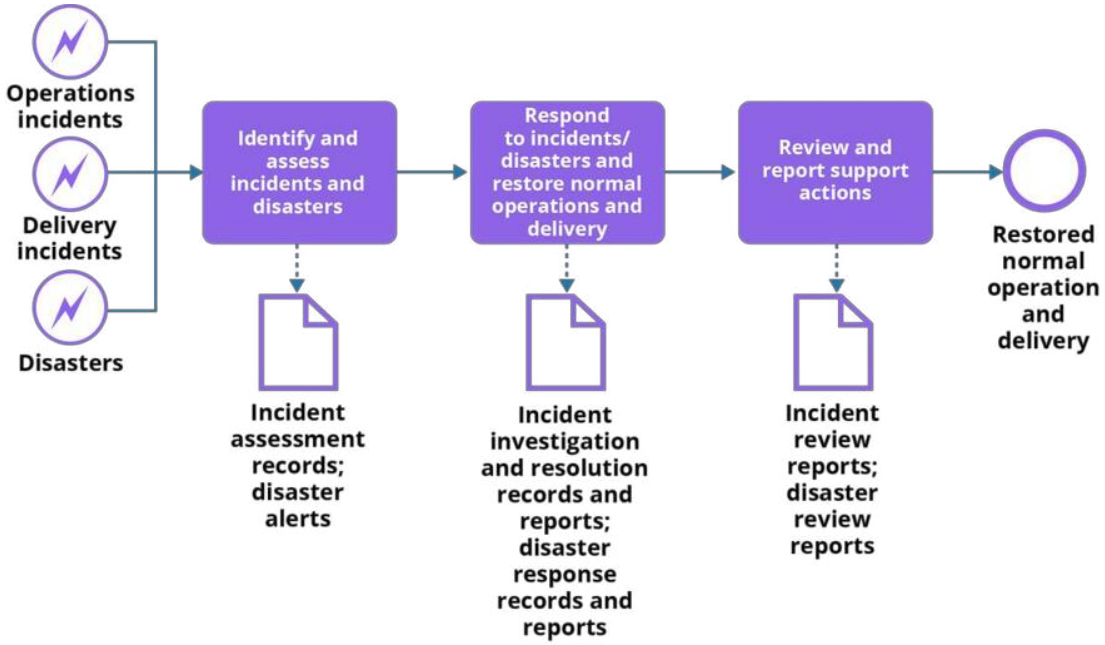


Figure 4.11 High-level workflow of the 'support' activity

The 'support' iterations are triggered by incidents affecting product operation and/or service delivery, or by disasters that may affect the whole organization. The key outputs of the 'support' activity are restored normal operations of the organization and its products, as well as restored service delivery. Other outputs include post-mortem reports, which serve as an important input to the discover, design, build, transition, operate, and deliver activities.

Several management practices contribute to the 'support' activity. Key practices include service continuity management and incident management. A full list of the involved management practices and their role in the 'support' activity can be found in Appendix X.

Table 4.9 summarizes the key facts about the 'support' activity.

Table 4.9 Key facts about the 'support' activity

Activity	Support
Why do we do it?	To identify and resolve incidents, fulfil disaster recovery procedures, and capture consumer's feedback.
Who does it?	• Product teams. • SRE teams. • IT operations teams. • User support teams. • Service desk teams. • Other specialized teams as needed.
When is it performed?	When incidents or disasters are detected or reported.
What are the key outputs?	Restored normal product operation and service delivery.
What are the key metrics of success?	• Customer and user satisfaction with service support. • Speed of normal service restoration. • Negative impact of incidents and disasters on the organization and customers. • Support performance against the agreed SLA targets and product performance objectives. • Adherence to the product and service strategy and other relevant guidelines.

ITIL Car Rental | ‘Support’ activity

Even the best-designed services need strong support. The team prepared to monitor service health, respond to incidents, and continually improve through the ‘support’ activity.



Omar: Last week we had three similar incidents with driverless cars. After completing a trip, the cars did not have enough charge to reach the charging station and got stranded on the streets. We had to send a recovery vehicle and pay a fine, as one of the cars got stuck in a no parking zone.



Anna: Although these incidents did not affect our customer experience directly, they clearly indicate a need for improvement. The incidents caused additional costs and led to revenue loss due to unavailability of the cars.



Sam: We analysed the incidents. It turned out that although our system would never assign a car to a journey it would not be able to complete due to insufficient battery, we did not account for the distance to the closest charging station from the journey destination. We have updated the rules and conditions of the vehicle assignment to prevent such incidents from occurring in the future.



Maria: Additionally, we are considering a partnership with another electric vehicle charging network for better coverage.



Omar: With the increased use of hybrid and electric vehicles in our fleet, our road assistance team is adding emergency mobile charging to its support capabilities.

Customers reviews



Perfect cabs for 2025!!!

The ride was safe! The car sees and shows you everything on its digital map. It could see over and beyond cars, trees, pedestrians. It showed me in detail cars ahead of us, as well as oncoming cars that were about 40 metres away, turn signals of every car, and pedestrians standing in corners. Bonus luxuries include exceptionally smooth drive, without being overly cautious or slow. Truly felt like a competent driver. It did a better job than I would have. Other bonuses are the comfort of the vehicle, the temperature inside, and even the music. Very impressed! Excited for the future my kids will find ordinary.

A great experience overall, but...

It was our first experience while visiting LA. Unfortunately, the car we got looked like it was attacked by a bombing squad of seagulls. Since we had no time to change it, we went with it but contacted the support and were offered a $10 discount for any future ride. We did not get that opportunity since we were only staying for 2 days. It is a shame that this happened, since the idea is great and the experience overall was fantastic, but the service could be improved.

Amazing service! I have social anxiety and live in LA, so this is a lifesaver for me! Great customer service as well! The only downside is music selection and lack of an aux cord port or BT connection for a fully personalized experience. However, their selection is still fairly impressive, even if the same tracks are often shuffled into the various genres. Otherwise, it is very safe and extremely efficient! Overall, a 9.5/10 in my book! 💜



CHAPTER 5
THE ITIL VALUE SYSTEM

5.1 Introduction to the ITIL Value System

Chapter 4 described the ITIL Product and Service Lifecycle and the 8 management activities corresponding to the Lifecycle stages. Organizations perform these activities to ensure that the digital products and services they manage enable the intended value for service consumers and other stakeholders.

As described in Chapter 4 and detailed in Appendix B, the lifecycle management activities are enabled and supported by management practices, that is, organizational capabilities combining competencies, processes, methods and techniques, technology tools, and involving partners and suppliers. However, a high level of the product and service management capabilities is not enough to assure stakeholders that the organization's products and services will always be created, delivered, and supported at the agreed level. The organizational context is constantly changing, and organizations establish management systems to ensure continual review and adjustment of their objectives and their sustainable achievement.



Management system
Management system is a system of interconnected elements that establish policy and objectives and enable the achievement of those objectives.

ITIL defines the following elements of an organization's product and service management system:

- **Guiding principles**: recommendations that can guide an organization in all circumstances, regardless of changes in its goals, strategies, type of work, or management structure.
- **Value chain:** An entire set of activities that enables value through the provision of a product or service. These are the eight activities described in Chapter 4; an organization's product and service management system may include all or some of them.
- **Management practices**: sets of organizational capabilities designed for performing work or accomplishing an objective. ITIL describes 34 management practices.
- **Continual improvement:** a recurring organizational activity performed at all levels of an organization to ensure that the organization continually meets stakeholders' expectations. ITIL supports continual improvement with the ITIL continual improvement model, *the ITIL Continual Improvement* Official Practice Guide, and *ITIL Transformation*.

Working together, the components of the management system should ensure that digital products and services are managed in line with the organization's objectives, and that these objectives are continually reviewed and adjusted to address changes in the organizational context and stakeholders' expectations. But how do organizations ensure that the management system itself is effective, adaptive, and responsible? To achieve this, organizations adopt another level of oversight: governance of digital technology. This is the fifth component of the governance and management system:

- **Governance of digital technology:** a governance system focused on the current and future use of digital technology.

Together the five components form the ITIL Value System (ITIL VS).



ITIL Value System (ITIL VS)
The ITIL Value System (ITIL VS) is a model representing how all the components and activities of an organization work together to facilitate value creation through digital products and services.

The ITIL VS shows how governance and management systems work together. It describes the inputs to this system (opportunity and demand), the elements of this system (organizational governance, product and service management, continual improvement, and the organization's capabilities), and the outputs (achievement of organizational objectives and value for the organization, its customers, and other stakeholders).
Each organization's value system has interfaces with other organizations, forming an ecosystem that can, in turn, facilitate value for those organizations, their customers, and other stakeholders.

The key inputs to the ITIL VS are opportunity and demand. Opportunities represent options or possibilities to add value for stakeholders or otherwise improve the organization. Demand is the need or desire for products and services among internal and external consumers. The outcome of the ITIL VS is value for service consumers and other stakeholders.

The purpose of the ITIL Value System is to ensure that the organization continually and sustainably co-creates value with all stakeholders through the use and management of products and services.

The ITIL VS is shown in Figure 1.7. The left side of the figure shows opportunity and demand feeding into the ITIL VS from both internal and external sources. The right side shows the value created for the organization, its customers, and other stakeholders.

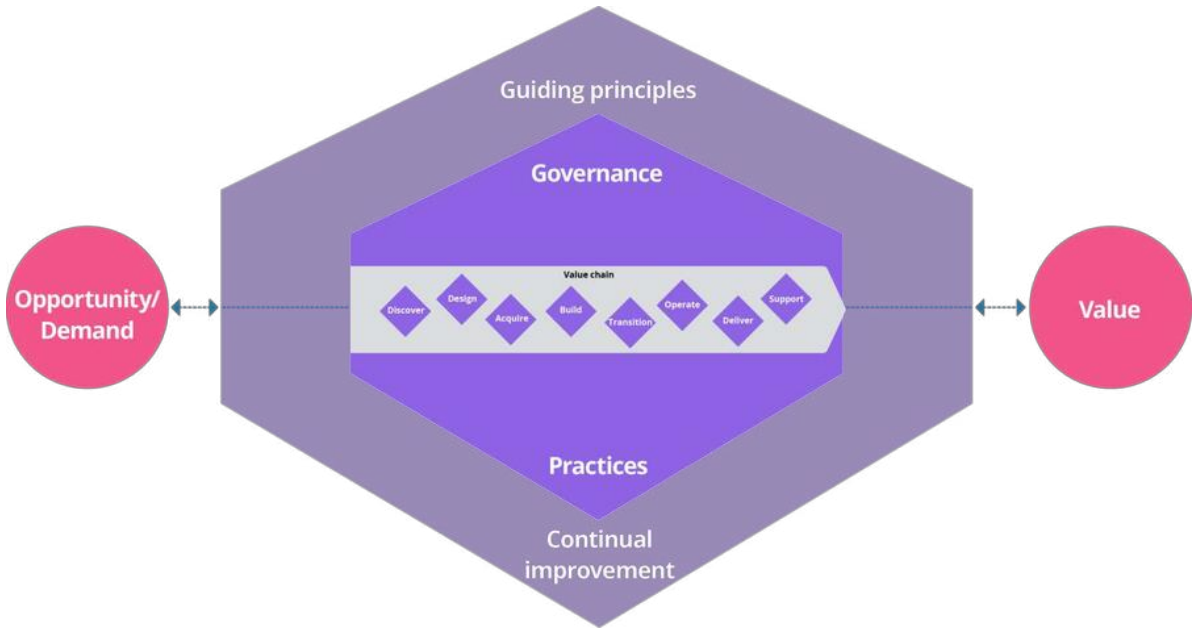


Figure 1.7 The ITIL Value System (ITIL VS)

The architecture of the ITIL VS specifically enables flexibility and discourages siloed working. The value chain activities and the practices in the ITIL VS do not form a fixed, rigid structure. Rather, they can be combined in multiple operating models and value streams to address the needs of the organization in a variety of scenarios.

Continual improvement and overall operation of an organization are shaped by the ITIL Guiding Principles. The guiding principles create a foundation for a shared culture across the organization, thus supporting collaboration and cooperation within and between the teams and removing the need for constraints and controls previously provided by silos.

As discussed in Chapter 3, an organization can take various forms. These include, but are not limited to, a sole trader, company, corporation, firm, enterprise, authority, partnership, charity,

or institution. An organization may also be any part or combination of these, whether incorporated or not, and may be either public or private. This means that the scope of the ITIL VS can be a whole organization or a smaller subset of that organization. To achieve the maximum value from the ITIL VS and to properly address the issue of organizational silos, it is preferable to include the whole organization in the scope rather than a subset.

The following sections of this chapter explore each of the five components of the ITIL VS.

5.2 The ITIL Guiding Principles

Throughout the Industrial Age, organizations introduced multiple fixed constraints in the form of rules, policies, and processes to follow. In today's constantly changing world, it is impossible to create definitive rules for all circumstances, but it is still important to ensure that all members of an organization, and all decisions made in the organization, are aligned with the organizational values and help to achieve the agreed objectives. This is why it is so important to adopt a set of guiding principles: they enable decision-making even in the absence of clear detailed guidance and in unexpected or uncertain situations.

The **ITIL Guiding Principles (ITIL GP)** are recommendations that can guide an organization in all circumstances, regardless of changes in its goals, strategies, type of work, or management structure.

ITIL provides seven guiding principles:

- 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 ITIL Guiding Principles can be adopted as a full and sufficient set or adapted to the existing organizational values and principles. They are aligned and compatible with sets of principles offered by agile, DevOps, and other bodies of knowledge on digital product and service management. Although designed to guide organizations' management and use of digital technology, the ITIL Guiding Principles apply to all types of organizations, industries, and activities.

5.2.1 Focus on value



All activities conducted by the organization should link back, directly or indirectly, to value for the organization itself, its customers, and other stakeholders.

This section is mostly focused on the creation of value for service consumers. However, products and services also contribute to value for the organization and other stakeholders. This value may come in various forms, such as revenue, customer loyalty, lower cost, or growth opportunities. The following recommendations can be adapted to address various stakeholder groups and the value that is created for them by the organization.

5.2.1.1 Who is the service consumer?

When focusing on value, the first step is to know who is being served. In each situation, the service provider must, therefore, determine who the service consumer is and who the key stakeholders are: for example, customers, users, or sponsors (see Section 2.2 for more details). In doing this, the service provider should consider who will receive value from what is being delivered or improved. The understanding of the target audience and key stakeholders is achieved through the 'discover' activity performed and the organizational, portfolio, and product levels.

Next, the organization needs to understand what is truly of value to the service consumer. The service provider needs to know:

- why the consumer uses the services
- what the services help them do
- how the services help them achieve their goals
- how do they feel when using the services
- the role of cost/financial consequences for the service consumer
- the risks involved for the service consumer.

Value can come in many forms, such as increased productivity, reduced negative impact, reduced costs, the ability to pursue new markets, or a better competitive position. The value for the service consumer(s):

- is defined by their own needs
- is achieved through the support of intended outcomes and optimization of the service consumer's costs and risks
- is subjective and influenced by the service experience
- changes over time and in different circumstances.

5.2.1.2 Applying the principle

To apply this principle successfully, consider the following:

- **Know how service consumers use each service:** understand their expected outcomes, how each service contributes to these, and how the service consumers perceive the service provider. Collect feedback on value on an ongoing basis, not just at the beginning of the service relationship.
- **Encourage a focus on value among all staff:** teach staff to be aware of who their customers are and to understand customer and user experience. Make sure that every leader, manager, and team member knows why they do their job and what it means for the service consumers.
- **Focus on value during normal operational activity as well as during improvement initiatives:** the organization as a whole contributes to the value that the customer perceives. Therefore, everyone within the organization must maximize the value they create. The creation of value should not rest solely with those involved in exciting projects and innovations.
- **Include focus on value in every step of any improvement initiative:** everybody involved in an improvement initiative needs to understand what outcomes the initiative is trying to facilitate, how its value will be measured, and how they should be contributing to the co-creation of that value.
- **Leverage AI:** AI enables real-time data analysis and predictive analytics, helping organizations continuously understand and anticipate customer needs, preferences, and

experiences. By utilizing AI-driven insights, service providers can better align their services with customer expectations, improving service relevance and customer satisfaction, thereby enhancing overall value.

5.2.2 Start where you are



In the process of eliminating old, unsuccessful methods, products, or services and creating something better, there can be a strong impulse to remove what has been done in the past and build something completely new. This is rarely necessary or a wise decision. This approach can be extremely wasteful, not only in terms of time, but also in terms of the loss of existing capabilities, competencies, people, and tools that could have significant value in the improvement effort. Do not start over without first considering what is already available to be leveraged.

5.2.2.1 Assess where you are

Products, services, and practices already in place should be measured and/or observed directly to properly understand their current state and identify which aspects may be valuable for reuse. Decisions on how to proceed should be based on information that is as accurate as possible. Within organizations, there is frequently a discrepancy between reports and reality. This is due to the difficulty of accurately measuring certain data, or the unintentional bias or distortion of data that is produced through reports. Direct observation often proves to be a more insightful and efficient approach than relying solely on management reports.

Those observing an activity should not be afraid to ask what may seem to be stupid questions. It can sometimes be beneficial for a person with little or no prior knowledge of the product, service, or practice to be part of the observation, as they have no preconceptions and may notice things that could be overlooked by those closely involved.

There are multiple perspectives and methods of assessment of the current state. The ITIL Official Practice Guides provide organizations with key metrics that can be used to measure practice effectiveness and performance. The Official Practice Guides also include capability criteria and practical recommendations for evaluation of each practice's capability level. The ITIL Maturity Model provides a method and a comprehensive set of criteria for assessing the capability levels of all ITIL practices and the maturity of the overall value system.

Recommendations on measuring and evaluating service quality can be found in the *ITIL Service Level Management (Version 5)* Official Practice Guide. A universal approach for measurement and reporting is provided in the *ITIL Measurement and Reporting (Version 5)* Official Practice Guide.

5.2.2.2 The influence of measurement

The use of measurement is important to this principle. It should, however, support but not replace what is observed, as over-reliance on data analytics and reporting can unintentionally introduce biases and risks in decision-making. Organizations should consider a variety of techniques to develop knowledge of the environment in which they work.

It should be noted that the act of measuring can sometimes affect the results, making them inaccurate. This is especially important when measuring individual or team performance. For example, if a service desk agent knows that the duration of a phone call with a user serves as a metric of their performance, they might focus too much on minimizing the call time, rather than helping users resolve issues to their satisfaction. People are very creative in finding ways to meet

the metrics they are measured against. Therefore, metrics need to be meaningful and directly relate to the desired outcome.



"When a measure becomes a target, it ceases to be a good measure.[7]"
Goodhart's Law

5.2.2.3 Applying the principle

Having a proper understanding of the current state of products, services, and practices is essential for deciding what to reuse, alter, or build upon.

To apply this principle successfully, consider the following:

- **Evaluate the current state:** look at what exists as objectively as possible, using the customer or the desired outcome as the starting point. Are the elements of the current state fit for purpose and fit for use? Many elements of the current products, services, practices, projects, and skills are likely to be used to create the desired future state, provided that the people making this judgement remain objective.
- **Identify and build on successful existing practices:** when examples of successful practices, products or services are found in the current state, it should be assessed whether and how these can be replicated or expanded upon to achieve the desired state. In many, if not most, cases, leveraging what already exists will reduce the amount of work needed to transition from the current state to the desired state. There should be a focus on learning and improvement, not just replication and expansion.
- **Apply your risk management skills:** reusing existing practices and processes carries risks, such as the continuation of old behaviours that are damaging to the service. Introducing something new also poses risks, such as new methods not being applied correctly. These risks should be considered as part of the decision-making process, and both the risks of making or not making a change should be evaluated to determine the best course of action.
- **Leverage AI:** AI-driven analytics can rapidly assess existing service management practices, processes, and historical performance data, providing a clear, unbiased baseline. This helps organizations objectively understand their current state and effectively identify realistic improvement opportunities without discarding existing valuable resources and information.
- **Recognize that sometimes nothing from the current state can be reused:** regardless of how desirable it may be to reuse, repurpose and recycle, or even upcycle, there will be times when the only way to achieve the desired result is to start over entirely. It should be noted, however, that these situations are very rare.

5.2.3 Progress iteratively with feedback



Product and service management iterations can be sequential or simultaneous, with multiple feedback loops between them. This also applies to practices and work methods improvement. Each individual iteration should be both manageable and managed, ensuring that tangible results are returned in a timely manner and built upon to create further improvement.

5.2.3.1 The role of feedback

Whether working to improve a product, service, practice, process, or technical environment, no improvement iteration occurs in a vacuum. While the iteration is being undertaken, circumstances can change, new priorities can arise, and the need for the iteration may be altered

or even eliminated. Seeking and using feedback before, throughout, and after each iteration will ensure that actions are focused and appropriate, even in changing circumstances.

Feedback
Feedback is information about stakeholder reactions and opinions, which is used as a basis for improvement.

Feedback loop
Feedback is information about stakeholder reactions and opinions, which is used as a basis for improvement.

A feedback loop is a term commonly used to refer to a situation where part of the output of an activity is used for new input. In a well-functioning organization, feedback is actively collected and processed along the value streams. Well-constructed feedback mechanisms facilitate an understanding of:

- users and customers perceptions of the value created
- efficiency and effectiveness of product and service management activities
- effectiveness of governance as well as management controls
- interfaces between the organization and its partner and supplier network
- changing demand for products and services.

To achieve this, service providers and product vendors should continually capture, regularly analyse, and consistently react to the voice of the stakeholders, including users, customers, and sponsors of digital services.

Information from the service consumer stakeholders should be captured at all stages of their service journeys. This information may be structured or unstructured, solicited or unsolicited, as shown in Figure 5.1. Once received, feedback can be analysed to identify improvement opportunities, risks, and issues.

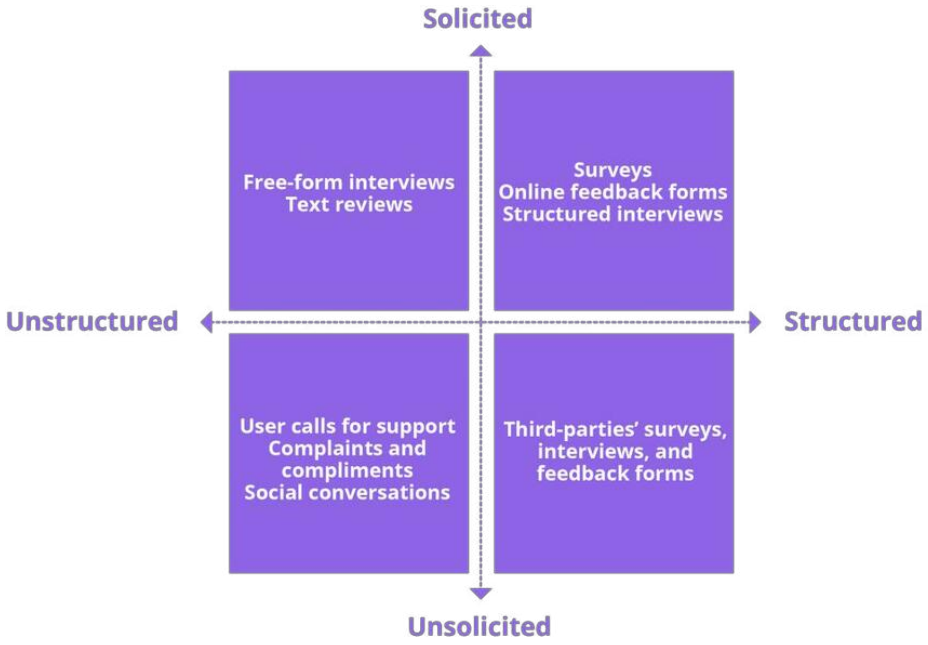


Figure 5.1 Types and examples of stakeholders' opinions that can be captured by a service provider

5.2.3.2 Combining iteration and feedback

Working in a timeboxed, iterative manner with feedback loops embedded into the workflow allows for:

- greater flexibility
- faster responses to customer and business needs
- the ability to detect and respond to failures earlier
- an overall improvement in quality.

Having appropriate feedback loops between the participants of an activity gives them a better understanding of where their work comes from and where their outputs go. It also helps them see how their actions and outputs affect the outcomes, which, in turn, enables them to make better decisions.

5.2.3.3 Applying the principle

To apply this principle successfully, consider this advice:

- **Comprehend the whole but do something:** sometimes the greatest enemy to progressing iteratively is the desire to understand and account for everything. This can lead to what is sometimes called 'analysis paralysis', in which so much time is spent analysing the situation that nothing ever gets done about it. Understanding the big picture is important but so is making progress.
- **The ecosystem is constantly changing, so feedback is essential:** change is happening constantly, so it is very important to seek and use feedback consistently and at all levels.
- **Fast does not mean incomplete:** just because an iteration is small enough to be done quickly does not mean that it should not include all the elements necessary for success. Any iteration should be produced in line with the concept of the **Minimum Viable Product (MVP).** An MVP is a version of the final product which allows the maximum amount of validated learning with the least effort.
- **Leverage AI:** AI facilitates iterative progress by processing continuous feedback and real-time performance metrics. By rapidly identifying trends, issues, or bottlenecks, AI supports timely decisions and adjustments in ongoing initiatives, ensuring services are continually refined and improved incrementally rather than in large, disruptive changes.

5.2.4 Collaborate and promote visibility



When initiatives involve the right people in the correct roles, efforts benefit from better buy-in, more relevance (because better information is available for decision-making) and increased likelihood of long-term success.

Creative solutions, enthusiastic contributions, and important perspectives can be acquired from unexpected sources, so inclusion is generally a better policy than exclusion. Cooperation and collaboration are better than isolated work, which is frequently referred to as 'silo activity'. Silos can occur through the behaviour of individuals and teams, but also through structural causes. This typically happens where functions or business units in an organization are impeded or unable to collaborate, because their workflows, systems, documentation, and communications are designed to fulfil the needs of only a specific part of the organization. Applying the guiding principles of 'focus on value' and 'think and work holistically' (see Sections 5.2.1 and 5.2.5) can help organizations break down barriers between silos of work.



Recognition of the need for genuine collaboration has been one of the driving factors in the evolution of ways of working. Without effective collaboration, neither agile, Lean, nor any other product and service management framework or method will work.

Collaboration that leads to real accomplishment requires information, understanding, and trust. Work and its results should be made visible, hidden agendas should be avoided, and information

should be shared to the greatest degree possible. The more people are aware of what is happening and why, the more they will be willing to help.

5.2.4.1 Whom to collaborate with

Identifying and managing all the stakeholder groups that an organization deals with is important, as the people and perspectives necessary for successful collaboration can be sourced within these stakeholder groups. As the name suggests, a stakeholder is anyone who has a stake in the activities of the organization, including the organization itself, its customers and/or users, and many others. The scope of stakeholders can be extensive.

The first and most obvious stakeholder group is the customers. The main goal of an organization is to facilitate outcomes that matter to its customers, giving them significant stake in the organization's ability to manage products and services effectively.

Other examples of stakeholder collaboration include:

- suppliers collaborating with the organization to define its requirements and brainstorm solutions to customer problems
- relationship managers collaborating with service consumers to achieve a comprehensive understanding of service consumer needs and priorities
- internal and external teams collaborating with each other to review shared workflows and identify opportunities for optimization and potential automation
- product teams working with other internal teams (SRE, IT operations, user support, and so on) to ensure effective management of products and services throughout the ifecycle.

5.2.4.2 Increasing visibility

When stakeholders (whether internal or external) have poor visibility of the workload and progression of work, there is a risk of creating the impression that the work is not a priority. If an initiative is communicated to a team, department, or another organization and then is never, or rarely, mentioned again, the perception will be that it is not important. Equally, when team members attempt to prioritize improvement work versus other tasks that have daily urgency, improvement work may seem to be a low-priority activity, unless its importance has been made transparent and is supported by the organization's management.

Insufficient visibility of work leads to poor decision-making, disengagement, and lower adoption of the work outputs. To avoid this, organizations need to:

- understand the flow of work in progress
- identify and address bottlenecks, as well as excess capacity
- uncover and eliminate waste
- provide visibility to all relevant stakeholders through dashboards, Kanban boards, and other visual tools.

5.2.4.3 Applying the principle

To apply this principle successfully, consider the following:

- **Collaboration does not mean consensus:** it is not necessary, nor even wise, to get consensus from everyone involved in an initiative before proceeding. Some organizations are so concerned with getting consensus that they try to make everyone happy and end up either doing nothing or producing something that does not properly suit anyone's needs.

- **Communicate in a way the audience can hear:** in an attempt to bring different stakeholders into the loop, many organizations use very traditional methods of communication, or they use the same method for all communication. Selecting the right method and message for each audience is critical for success.
- **Decisions can only be made on visible data:** making decisions in the absence of data is risky. Decisions should be made about what data is needed, and, therefore, what work needs to be made visible. Collecting data may involve costs, and the organization must weigh those costs against the expected benefits and intended use of the data.
- **Leverage AI:** AI-powered collaboration platforms can break down information silos, ensuring knowledge sharing across teams and departments. Natural language processing and machine learning enable AI to proactively highlight relevant insights, updates, and risks, thus enhancing organizational visibility and cross-functional collaboration.

5.2.5 Think and work holistically



No product, service, practice, process, team, or supplier stands alone. The outputs that the organization delivers to itself, its customers, and other stakeholders will suffer, unless it works in an integrated way to handle its activities as a whole, rather than as separate parts.

Taking a holistic approach to product and service management includes establishing an understanding of how all the parts of an organization work together in an integrated way. It requires end-to-end visibility of how demand is captured and translated into outcomes. In a complex system such as any modern organization, the alteration of one element can impact others. Where possible, these impacts need to be identified, analysed, and addressed appropriately.

In the ITIL Value System, a holistic approach includes:

- considering all ITIL Four Dimensions of Product and Service Management
- understanding and observing the full Product and Service Lifecycle, even when not all stages of the Lifecycle are controlled by the organization or team
- understanding the organization's position in the supply chain
- understanding and managing products and service's impact on the service consumers
- continually monitoring and analysing the PESTLE factors affecting the organization.

5.2.5.1 Applying the principle

To apply this principle successfully, consider the following:

- **Recognize the complexity of systems:** different levels of complexity require different heuristics for decision-making. Applying methods and rules designed for a simple system can be ineffective or even harmful in a complex system, where the relationships between components are complicated and change more frequently.
- **Collaboration is key to thinking and working holistically:** if the right mechanisms are put in place for all relevant stakeholders to collaborate in a timely manner, it will be possible to address any issue holistically without being unduly delayed.
- **Where possible, look for patterns in the interactions between system elements:** draw on knowledge from each area to identify what is essential for success, and which relationships between elements influence the outcomes. With this information, needs can be anticipated, standards can be set, and a holistic viewpoint can be achieved.
- **Automation and AI can facilitate working holistically:** where the opportunity and sufficient resources are available, automation and AI can support end-to-end visibility for the

organization and provide insights for more integrated management. AI algorithms excel at analysing complex interactions across multiple data points, services, processes, and stakeholders. AI supports holistic management by identifying dependencies, risks, and impacts across the entire value system, enabling coordinated and comprehensive decision-making.

5.2.6 Keep it simple and practical



Always aim to minimize the number of steps to accomplish an objective. Apply outcome-based thinking to produce practical solutions. If a process, product, service, action, or metric fails to increase value or produce a useful outcome, then eliminate it.

Trying to provide a solution for every exception will often lead to over-complication. When creating a product or a practice, designers need to think about exceptions, but they cannot cover them all. Instead, they should design rules that can be used to handle exceptions generally. As mentioned in the introduction to this chapter, fixed constraints are not effective in high-complexity situations; enabling constraints, such as guiding principles, works better, especially when supported with autonomy, trust, and sufficient resources.

Understanding exactly how something contributes to value creation is critical to keeping product and service management simple and practical. For example, a step in a process may be perceived by the team involved as a waste of time. However, from a corporate perspective, the same step may be important for regulatory compliance and, therefore, valuable in an indirect but important way. It is necessary to establish and communicate a holistic view of the organization's work so that individual teams or groups can think holistically about how their work is influenced by others, and, in turn, influences others.

The principle applies to product and service design in the same way: product teams should identify features that maximize value for customers, users, and the organization and deprioritize or completely dismiss everything that does not. To avoid the 'build trap' when more and more features are built, overcomplicating the products, organizations should stay focused on value and keep their products and services simple and practical.

5.2.6.1 Conflicting objectives

When designing, managing, or operating ways of working, one should be mindful of conflicting objectives. For example, the management of an organization may want to collect a large amount of data to make decisions, whereas the people who must do the record-keeping may want a simpler process that does not require as much data entry. Through the application of this and the other guiding principles, the organization should agree on a balance between its competing objectives. In this example, this could mean that product solutions should only generate data that will truly provide value to the decision-making process, and record-keeping should be optimized and automated where possible to maximize value and reduce non-value-adding work.

5.2.6.2 Applying the principle

To apply this principle successfully, consider the following:

- **Ensure value:** every activity should contribute to the creation of value.
- **Simplicity is the ultimate sophistication:** it may seem harder to simplify, but it is often more effective.

- **Do fewer things but do them better:** minimizing activities to include only those with value for one or more stakeholders will allow more focus on the quality of those actions.
- **Empower people through trust, autonomy, and resources:** this is more effective than overcomplicated procedures and controls, especially in complex situations.
- **Simplicity encourages adoption:** to embed a new practice or increase adoption of a product, make sure it is easy to use.
- **Leverage AI:** AI helps identify inefficiencies, redundancies, or overly complex procedures through detailed analytics and pattern recognition. It streamlines and automates routine and repetitive tasks within service management, allowing staff to focus on more strategic activities, thus simplifying workflows and enhancing practicality.

5.2.7 Optimize and automate



Technology can help organizations to scale up and take on an increasing number of tasks, allowing people to do more complex decision-making. However, the use of technology, especially generative AI, should be subject to governance, ethical, and compliance policies and controls. Automation for automation's sake can increase costs, introduce significant risks, and reduce organizational resilience.

Optimization is making something as effective, efficient, and useful as it needs to be. Before an activity or practice can be effectively automated, it should be optimized to whatever degree is reasonably possible. It is essential that limits are set on the optimization of products, services and practices, as they exist within a set of constraints which may include financial limitations, compliance requirements, time constraints, and resource availability.

5.2.7.1 The road to optimization

There are many ways in which practices, products, and services can be optimized. ITIL supports optimization efforts by providing a structured guide to implementation, *ITIL Transformation* Official Book**,** and the *ITIL Continual Improvement* and *Measurement and Reporting* Official Practice Guides. Chapter 6 of this book introduces an approach to product and service value stream mapping and management, a powerful method of workflow optimization.

Regardless of the specific techniques, the path to optimization follows these high-level steps:

- **Understand and agree the context in which the proposed optimization exists:** this includes agreeing the overall vision and objectives of the organization.
- **Assess the current state of the proposed optimization:** this helps identify areas for improvement and determine which improvement opportunities are likely to produce the biggest positive impact.
- Agree what the future state and priorities of the organization should be, focusing on simplification and value: this typically includes standardization of practices, products, and services, which will make it easier to automate or optimize further later on.
- Ensure the proposed optimization has the appropriate level of stakeholder engagement and commitment: this helps secure buy-in and sustained support throughout the process.
- **Execute the improvements in an iterative way:** use metrics and additional feedback to check progress, stay on track, and adjust the approach to the optimization as needed.
- **Continually monitor the impact of optimization:** this helps identify opportunities to improve methods of working.

5.2.7.2 Using automation and AI

Automation typically refers to the use of technology to perform a step or series of steps correctly and consistently with limited or no human intervention. For example, in organizations adopting continuous deployment, it refers to the automatic and continuous deployment of code from development through to live, and often includes automatic testing in each environment. In its simplest form, however, automation could also mean the standardization and streamlining of manual tasks, such as defining the rules of a part of a process to allow decisions to be made 'automatically'. Efficiency can be greatly increased by reducing the need for human involvement at each stage of the process.

Opportunities for automation can be found across the entire organization. Looking for opportunities to automate standard and repeating tasks can help save the organization's costs, reduce human error, and improve employee experience.

The rapid adoption of Generative AI (Gen AI) across industries has also had an impact on digital product and service management. On the one hand, digital products and service touchpoints often include AI-enabled features, and this is increasingly expected by service consumers. On the other hand, all product and service management activities can benefit from the use of AI. Examples include, but are by no means limited to, the following:

- Co-piloting involves virtual AI assistants for software developers, testers, support specialists, SRE teams, and potentially all other specialist roles.
- Data analysis and insights enable fast analysis of large volumes of data, correlation of disparate information, and generation of solutions and suggestions. This AI capability has huge potential in practices such as risk management, knowledge management, monitoring and event management, observability, problem management, service configuration management, and more.
- Intelligent automation supports various activities, including software development and testing, deployment and release management, incident resolution, and more.
- Service delivery and user support is provided in the form of chat bots or user co-pilots.
- Process mining and optimization of workflows are often followed by improvements to the workflow automation.

More opportunities will emerge every year. However, just like with simpler forms of automation, the quality of AI solutions depends heavily on the quality of the input data and workflows. The importance of optimization before automation is even higher when AI solutions are considered. And just as with other technology solutions, but at an even greater magnitude, it is important to ensure effective governance of AI, including sustainability, ethics, privacy, and information security.

5.2.7.3 Applying the principle

To apply this principle successfully, consider the following:

- **Simplify and/or optimize before automating:** attempting to automate something that is complex or suboptimal is unlikely to achieve the desired outcome. Take time to map out the standard and repeating workflows as far as possible and streamline where you can (optimize). From there, you can begin automating.
- **Define your metrics:** the intended and actual result of the optimization should be evaluated using an appropriate set of metrics. Use the same metrics to define the baseline and measure the achievements. Make sure the metrics are outcome-based and focused on value.

- **Use the other guiding principles when applying this one:** when optimizing and automating, it is recommended to follow the other principles as well:
- **Progress iteratively with feedback:** iterative optimization and automation will make progress visible and increase stakeholder buy-in for future iterations.
- **Keep it simple and practical:** it is possible for something to be simple, but not optimized, which is why these two principles should be used together when selecting improvements.
- **Focus on value:** selecting what to optimize and automate and how to do so should be based on what will create the best value for the organization.
- **Start where you are:** the technology already available in the organization may have features and functionalities that are currently untapped or under-utilized. Make use of existing resources to implement opportunities for optimization and automation quickly and economically.
- **Leverage AI:** AI is instrumental in automating routine activities, from incident detection and classification to capacity management and request fulfilment. By using intelligent automation, organizations optimize resource utilization, reduce human errors, and significantly improve service delivery efficiency. AI also enables continual monitoring of service quality, identifying further optimization opportunities.
- Ensure effective governance of the digital technology: consider sustainability, ethics, privacy, and information security.

5.2.8 Principles interaction

In addition to being aware of the ITIL Guiding Principles, it is important to recognize that they interact with and depend upon each other. For example, if an organization is committed to progressing iteratively with feedback, it should also think and work holistically to ensure that each iteration of an improvement includes all the elements necessary to deliver real results. Similarly, making use of appropriate feedback is key to collaboration, and focusing on what will truly be valuable to the customer makes it easier to keep things simple and practical.

Organizations should not use just one or two of the principles but should consider the relevance of each of them and how they complement each other. There is no particular order or hierarchy of these principles; they are equally important for the ITIL VS. However, in any given situation, some principles may be more critical than others.

The ITIL Guiding Principles have been adopted and applied by many organizations across the globe, and they are likely to fully apply to your organization too. However, do not hesitate to adapt and adjust them to the context of your organization. It is more important to have a set of principles that is aligned with the organization's values and resonates with all members of the organization, than to blindly adopt the seven guiding principles offered by ITIL.

5.3 Governance

5.3.1 Governing bodies and governance



Every organization is directed by a governing body: —a person or group of people who are accountable at the highest level for the performance and compliance of the organization. The governing body may be a board of directors or executive managers who take on a separate governance role when they are

performing governance activities. The governing body is accountable for the organization's compliance with policies and external regulations.
Governance of the use of digital technology is an important part of corporate governance.

Governance
Governance is the system by which an organization is directed and controlled.

Organizational governance applies to all aspects of the organization, including the use of digital technology and the digital product and service management system.

Governance of digital technology
Governance of digital technology is a human-based system by which the current and future use of digital technology is governed. The system comprises directing, overseeing and accountability.

Digital technology governance is realized through the following activities:

- **Engage stakeholders:** identifying relevant internal and external stakeholders and ensuring that the desired governance outcomes are understood and the accountability of the governing body is agreed. This includes making clear commitments regarding the use of digital technology and data and agreed actions in case these commitments are breached.
- **Evaluate:** evaluating the organization, its strategy, portfolios, and relationships with other parties. The governing body evaluates the organization on a regular basis as stakeholders' needs and external circumstances evolve.
- **Direct:** assigning responsibility for, and directing the preparation and implementation of, organizational strategy and policies. The governing body sets strategies that define the direction and prioritization for organizational activity, future investment, and so on. It also sets policies to establish the requirements for behaviour across the organization and, where relevant, suppliers, partners, and other stakeholders.
- **Monitor:** monitoring the performance of the organization and its practices, products, and services. The governing body ensures that performance is in accordance with policies and strategic direction.

5.3.2 Governance patterns

Organizations' approach to governance vary, shaped by the organizational values, culture, business context, and other factors. Organizations typically adopt one of four dominant governance patterns along the axes of authority (centralized ↔ distributed) and assurance (structured ↔ emergent), illustrated in Figure 5.2 and described through the lens of governance activities in Table 5.2.

- **Directive:** top-down control through formal hierarchies, strict procedures, and standardized processes.
- **Guided:** central vision and strategic direction with local freedom in execution and implementation.
- **Federated:** multiple distributed units with delegated authority coordinating through formal structures.
- **Autonomous:** self-organizing teams making decisions through peer collaboration and influence.

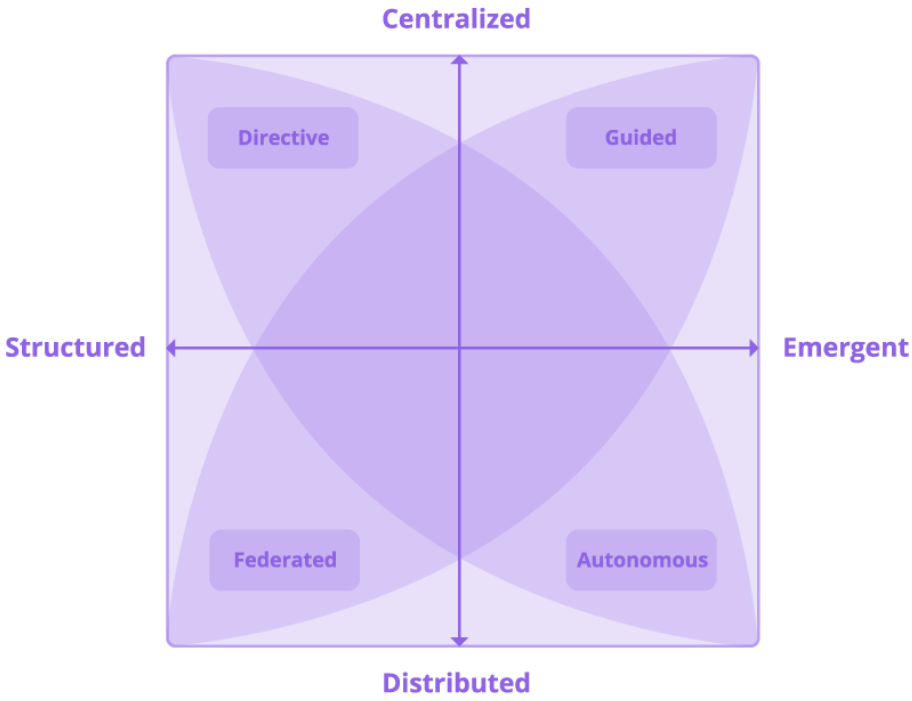


Figure 5.2 Governance patterns defined by authority and assurance

To help with identifying the closest-matching governance pattern, the frequently observable characteristics of the four governance activities as described in Table 5.2 can be used.

These descriptions represent the extreme version of the patterns and can manifest themselves in more balanced approaches within the quadrant in the context of the specific organization. It is highly unlikely for an organization to manifest pure extreme characteristics across all four governance activities; every organization is somewhere between the four extreme corners.

Table 5.1 Characteristics of governance patterns

	Directive	Guided	Federated	Autonomous
Engage stakeholders	Top-down information flow; stakeholders receive decisions, not consulted.	Leadership storytelling and vision-casting; idea harvesting from below.	Protocol-based engagement per unit; inter-unit coordination forums.	No designated engager; anyone can convene anyone.
Evaluate organization	Performance against predetermined standards; deviation requires justification.	Success redefined as context evolves; leading indicators valued over lagging.	Unit-specific interpretation of enterprise metrics; systematic comparison across units.	No imposed metrics; groups define what matters to them.
Direct organization	Permission required for decisions; escalation for any deviation.	Direction through 'commander's intent'; how is flexible if why is clear.	Documented decision rights matrix; structured escalation paths between units.	No formal directing; influence through expertise not position.

	Directive	Guided	Federated	Autonomous
Monitor organization	Compliance verification; variance reports trigger intervention.	Pattern sensing over rule-checking; insights valued over compliance.	Standardized exception handling; portfolio-level integration reviews.	No formal monitoring; peer visibility creates natural accountability.
Typical signals of ineffectiveness	Initiative paralysis without approval; blind spots from filtered information.	Different interpretations of intent cause divergence; vision without execution.	Units optimize locally, suboptimize globally; coordination consumes excessive resources.	Lack of coherent direction; critical dependencies missed; uneven capability development.

5.3.3 Governance in the ITIL VS

The role and position of governance in the ITIL VS depends on how the value system is applied in an organization. The ITIL VS is a universal model that can be applied to the entire organization or to one or more of its organizational units. In the latter case, some organizations delegate authority to perform governance activities at different levels. The governing body of the organization should retain oversight to ensure alignment with organizational objectives and priorities.

In the ITIL VS, the guiding principles and continual improvement apply to all components of the value system, including governance. In an organization, the governing body can adopt the ITIL Guiding Principles and adapt them, or define its own specific set of principles and communicate them across the organization. The governing body should also have visibility of the outcomes of continual improvement activities, as well as how value is measured for the organization and its stakeholders.

Regardless of the scope of the ITIL VS and the positioning of the components, it is crucial to ensure that:

- product and service management activities are performed, and management practices are applied in line with the direction given by the governing body
- the governing body of the organization, either directly or through delegation of authority, maintains oversight of the product and service management system
- both the governing body and management at all levels maintain alignment through a clear set of shared principles and objectives
- governance and management at all levels are continually improved to meet evolving expectations of stakeholders.

Governance is required for the ongoing operation of an organization, as well as for organizational transformations. The *ITIL Transformation* Official Book describes several patterns of transformation governance and provides practical recommendations for each pattern.

5.4 Value chain

5.4.1 Operating models and value chains

Organizations exist to create value for customers and other stakeholders. The intended value and organization's positioning are translated into the organization's purpose.

Organization's purpose
Organization's purpose describes **what** an organization does for its consumers and other stakeholders and **why**.

To understand and communicate **how** an organization fulfils its purpose, an operating model is often used.

Operating model
Operating model is a conceptual and/or visual representation of how an organization co-creates value with its customers and other stakeholders, as well as how the organization runs itself.

Operating models typically describe several key elements. ITIL suggests structuring operating models around the ITIL Four Dimensions of Product and Service Management explained in Chapter 2:

- **Value streams and processes:** workflows used by the organization to structure its value-creating activities.
- **Organizations and people:** culture, competencies, and teams contributing to value creation.
- **Information and technology:** data, information, and technology tools used in value creation.
- **Partners and suppliers:** third parties contributing to value creation activities.

The highest level of the 'value streams and processes' dimension of an operating model can be described as organization's **value chain** (see Section 4.1).

The ITIL Product and Service Lifecycle Model (Figure 1.6) helps identify, analyse, and describe the key product and service management activities, allowing organizations to create, maintain, and utilize various management tools and techniques, including:

- value chain patterns (see Chapter 6)
- operating models
- value stream maps.

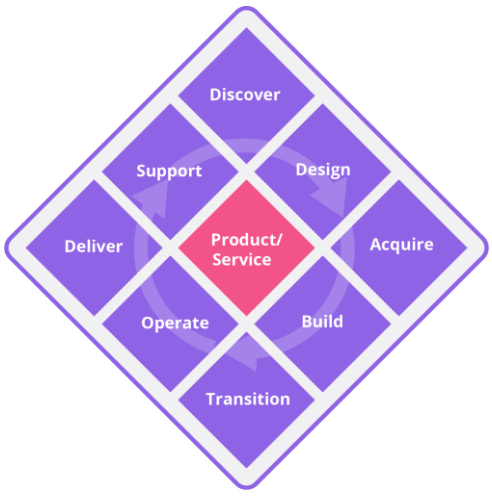


Figure 1.6 ITIL The Product and Service Lifecycle Model

Figure 5.3 shows how the organization's purpose and operating model are translated into the design of the product and service management system.

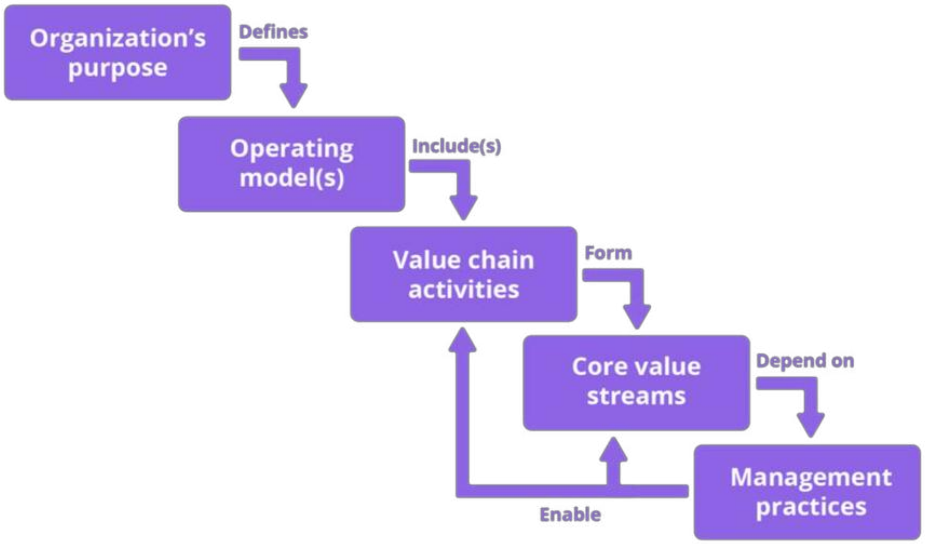


Figure 5.3 From organization's purpose to value streams

Each value chain activity is supported and enabled by several management practices. Every practice contributes to the organization's ability to manage a particular aspect of digital products and services. In combination, these practices enable the organization to manage digital products and services throughout their lifecycle, as shown in Figure 2.1.

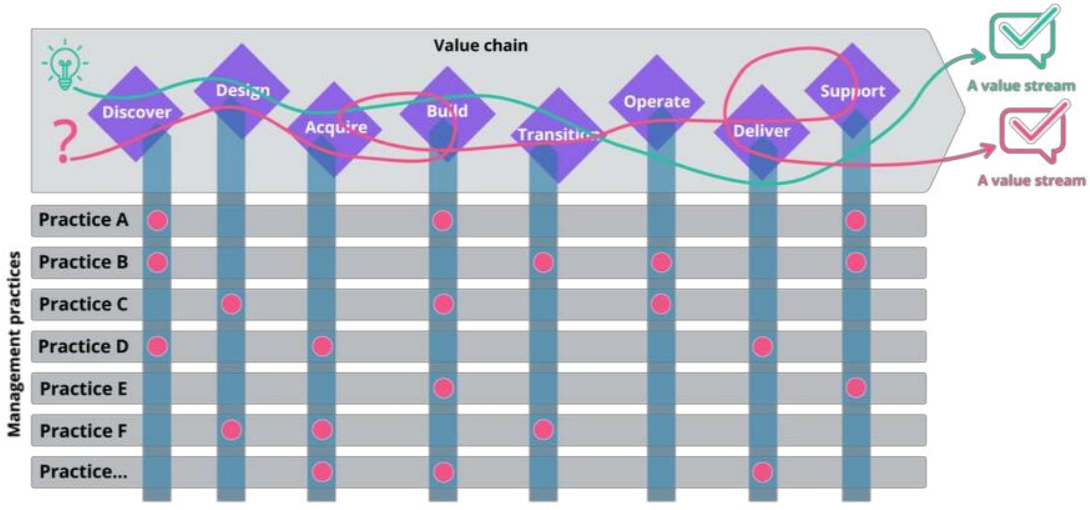


Figure 1.9 Management practices enable and support the value chain activities

A full mapping of management practices to the value chain activities is provided in Appendix B.

5.4.2 The value chain patterns

Every digital product and service goes through all stages of its lifecycle. In some cases, all eight stages are managed and all eight activities are performed by one organization. In other cases, responsibility for lifecycle management is shared between two or more organizations. These variations typically arise from two main factors:

- Purpose and operating model of the organization.
- Digital product and service sourcing preferences of the organization.

5.4.2.1 Internal IT organizations

There are several common value chain patterns adopted by internal IT organizations.

Example 1: Internal technology organization responsible for the full ITIL Product and Service Lifecycle

If the purpose of an internal technology organization is 'to support the core business of the company with effective and efficient technology solutions', and business-critical digital products and services are developed and delivered internally, then the internal technology organization is likely to take responsibility for all activities of the digital product and service management.

Discover: technology teams[1] together with internal business customers identify and prioritize needs and opportunities and translate them into initiatives for digital product development. The organization's technology leaders take accountability for digital strategy and digital product roadmap.

Design: technology teams analyse product development initiatives, problems, and stakeholder feedback on the existing products and services. Based on this analysis, they design solutions, which may include changes to the existing products and services or the introduction of new ones. Business representatives may be involved in the design activities (at various levels, from being members of the product teams and working on all steps of the design to simply approving the product specifications and prototypes).

Acquire: technology teams together with business procurement and other relevant teams ensure procurement and allocation of resources, in case the designed solutions require acquisition of new or reallocation of existing technical resources. The 'acquire' activity may also be performed to support ongoing operations of products and delivery of services.

Build: technology teams build, integrate, and test the designed solutions. As earlier, for some solutions, business representatives may be involved as members of the product teams or as testers of selected relevant components of the solutions. They also may be involved in authorizing the test results and approving the new solutions' transition to the live environment.

Transition: technology teams deploy the new or changed versions of the products to the live environment, ensuring their safe and successful deployment and operational readiness.

Operate: technology teams ensure safe and reliable operations of the live products. Although some technologies or operational activities may rely on external suppliers and partners (such as cloud service providers or equipment maintenance providers in remote locations), operational activities are managed by internal technology teams, which remain accountable for product performance in the live environment.

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Deliver: technology teams deliver digital services; they provide user access to product resources, ensure service performance agreed with business customers, fulfil service requests, and perform other actions agreed as a normal part of service delivery. As above, fulfilment of some delivery actions may be delegated to external suppliers, but the technology teams remain accountable for the service quality and responsible for the 'deliver' activity.

Support: technology teams detect and process deviations in product performance and service quality and provide user support.

In this operating model, the internal technology organization has to develop management capabilities required for effective management of all stages of the ITIL Product and Service Lifecycle and take responsibility for management and execution of all lifecycle management activities. Of course, some products will always be sourced from external vendors, such as office and productivity suites or other digital solutions. However, if critical products that enable the company's business require management of the full product and service lifecycle internally, then all lifecycle management activities should be performed and all supporting capabilities should be developed in the organization.

Example 2: Internal technology organization focused on service delivery

If the purpose of an internal technology organization is 'to ensure efficient and reliable delivery of IT services based on third-party technology solutions', and business-critical digital products and services are developed and delivered internally, then the internal technology organization is likely to take responsibility only for some activities of the digital product and service management.

Discover: technology leaders and teams may be involved in the selection of digital products and features for the company. However, in many organizations business leaders accept responsibility for this choice and involve external consultants, leaving the internal IT organization to focus on the operational, delivery, and support activities.

Design: internal technology teams may be consulted to ensure the designed solutions can be operated and supported. When external solution vendors are responsible for product design, this activity may remain invisible to the client organization, including both business and technology teams.

Acquire: external product vendors manage the acquisition and allocation of resources required to build the products, and this process remains invisible to the client organizations. Acquisition and allocation of additional resources for product operation, service delivery, and support may be done by internal technology teams together with the relevant business teams (procurement).

Build: external vendors build digital products, and the 'build' activity remains invisible to the client organizations, including both business and technology teams.

Transition: internal technology teams, depending on the architecture of the digital products, may be involved in integrating them into the organization's live environment or in reconfiguring the organization's environment to enable the use of the new or changed products. However, the external vendors are usually responsible for the deployment of the new and changed products.

Operate: internal technology teams typically manage and perform the 'operate' activity when digital products are run in the organization's live environment. If the products are operated in a vendor-controlled cloud, the responsibility remains with the vendor.

Deliver: internal technology teams are typically responsible for delivering the services based on external products. They agree and fulfil service level agreements, fulfil service requests, and ensure user access to the products in line with the organization's and vendor's policies.

Support: internal technology teams are typically responsible for supporting the services and for user support. Vendors and other third parties are typically involved in resolving certain types of incidents, but the responsibility for the overall support performance remains with the internal technology teams.

The responsibilities of external vendors and internal technology teams may vary from product to product, but in general, the pattern implies that external vendors are mostly responsible for creating and maintaining the products, and internal technology teams focus on the 'deliver' and 'support', and (optionally) 'operate' activities. Internal teams also need to perform the 'acquire' and 'transition' activities, ensuring readiness for service delivery and support.

Example 3: Internal technology organization acting as a service integrator

Of course, use of externally sourced products is not the only form of involving third parties in product and service management. Many organizations use managed service providers to operate, support, and sometimes deliver digital services. External integrators are often involved in transition, especially when externally sourced products need to be integrated in the organization's live environment. In this example, the purpose of an internal technology organization is 'to ensure efficient and reliable delivery of digital services and to coordinate third parties responsible for product development and operation'. The internal technology organization is likely to take responsibility only for few activities of the digital product and service management.

Discover: this activity is managed and performed by business leaders and managers, often supported by external consultants. Technology teams are consulted or informed.

Design, acquire, build, transition, operate: these activities are performed by external vendors, integrators, and service providers. Technology teams may be responsible for selecting, sourcing, and coordinating third parties, focusing on supplier management and integration.

Deliver, support: these activities may be performed by external suppliers and partners, however technology teams remain responsible for the quality of service delivery and support.

When internal IT teams adopt operating model patterns that transfer responsibility for certain product and service management activities to third parties, a shift in roles may occur. External vendors, integrators, and other service providers adopt complementary operating models focused on the activities that internal teams choose to outsource. Some common patterns are described below.

5.4.2.2 Commercial product vendors and service providers

There are several common value chain patterns adopted by internal IT organizations.

Example 4: Digital product vendor

There are many **digital product vendors** who choose 'providing digital products to individual users and small businesses' as their organization's purpose. These products are designed to be accessed via an app or the web and vendors do not offer customization. However, they continually improve these products to address customers' feedback and to utilize technology and market opportunities. These organizations take responsibility for all or most activities of digital product and service management.

Discover: product teams continually review the market, as well as technology opportunities, current product performance, and stakeholder feedback. They identify and prioritize improvement and update the product roadmap.

Design: product teams typically perform this activity often in combination with the 'discover' activity. Users and other stakeholders may be involved in the prototype testing, but the responsibility for design always remains with the product teams.

Acquire: product teams are responsible for acquiring any additional technical resources required by the new design. These resources may be procured or reallocated from an available resource pool. This may involve procurement or SRE teams, as well as cloud service providers, but the responsibility remains with the product teams.

Build: product teams build and test new components and products. Like the 'acquire' activity, this may involve other teams.

Transition: this activity is typically highly automated in such organizations, with product updates rapidly deployed to the live environment using CI/CD approaches and tools. This may include updates to the app version in a marketplace, where the app is available to customers, and updates to the cloud-based components of the product. The latter may involve the cloud service provider or the organization's own operational teams, depending on the hosting approach and product architecture.

Operate: the product teams remain accountable for the live product quality, although responsibility for the 'operate' activity may be delegated to dedicated teams (SRE, IT Operations) or an external service provider.

Deliver: most digital products for mass market are designed to require no 'delivery' actions (no service actions between the user and the provider, no transfer of goods). Access to the service is initiated by the customers themselves and the process is fully automated. This limits the 'deliver' activity to establishing formal service relationships (typically through a license agreement that customers and/or users must accept), monitoring and reporting service quality, and gathering and processing customer and user feedback and experience data. These are also responsibilities of product teams.

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Support: if product performance or service quality and experience deviate from the agreed (or internally predefined) levels, product teams ensure quick restoration of quality. This may involve operational and external teams, though product teams still have the responsibility.

Like the internal IT organizations described in Example 1, this type of digital product organizations takes responsibility for the full cycle of the ITIL Product and Service Lifecycle and for the quality of digital services. This means that digital product organizations manage and perform all lifecycle management activities. To enable them, they develop a wide range of product and service management practices. Other organizations focus on selected ITIL Product and Service Lifecycle stages and respective management activities.

Example 5: Custom software development

When the organization's purpose is 'to develop and ship software to meet specific customer requirements', which may respond to the needs of customers described in examples 2 and 3, the digital product vendor focuses on developing and shipping unique digital products but not on their operation or delivery of services:

Discover: the software vendor may be involved in identifying the needs and opportunities of a consumer organization, or leave this activity to the customer. Either way, responsibility for this activity is not typically taken by the software vendor; it stays with the consumer organization.

Design: the software vendor takes responsibility for designing software solutions and performs this activity by involving customer representatives to gather their requirements and confirm product design decisions.

Acquire: the software vendor acquires and allocates the technical resources needed to build, test, and deploy the new product. However, the consumer organization may remain responsible for acquiring the necessary resources to operate, deliver, and support the product.

Build: the software vendor is responsible for building and testing the product. Customer representatives may be involved in some forms of testing and third parties may be involved in building and testing.

Transition: the software vendor typically collaborates with the consumer organization, and sometimes an integrator, when the product is hosted by the consumer organization or a third party. In such cases, this activity takes the form of a joint project. Responsibilities are typically shared among the parties, with accountability for the project's outcomes remaining with the consumer organization.

Operate: if the product is hosted by the consumer organization or a third party, this activity is managed and performed by the consumer organization's technical team or a third party controlled by the consumer organization.

Deliver: service delivery based on the product created by the software vendor is a responsibility of the consumer organization's technical teams.

Support: the software vendor may be involved in the support of the product (typically, providing expert support for complicated issues), but the activity remains a responsibility of the consumer organization.

As described in some of the above examples, the operate, deliver, and support activities can sometimes be delegated to a specialized service provider. This is a case for another common pattern of value chain activities.

Example 6: Service integrator, managed service provider

Commercial service integrators and managed service providers whose organization's purpose can be 'to implement, operate, and support consumer's digital platform and software solutions' are focused on one or more stages of the ITIL Product and Service Lifecycle. This may include management and fulfilment of selected activities.

Transition: this type of service provider may be involved in integration projects but rarely takes responsibility for the full transition of a new or changed product to the live environment. However, they are likely to be responsible for transition of ongoing updates to digital products that they operate.

Operate: managed service providers may take responsibility for operation of digital products for consumer organizations or for software vendors.

Deliver: in some cases, managed service providers perform delivery activities on behalf of the consumer organization's technical teams. However, the consumer organization often remains accountable for the quality of digital services.

Support: this activity is often delegated to a specialized service provider. The service provider may take full responsibility for the activity and quality of support or may be involved in support of selected products and services.

5.4.2.3 Summary of the value chain patterns

Although these examples are not exhaustive, they describe the typical value chain patterns adopted by internal and external digital product and service providers. Table 5.2 summarizes the six patterns and highlights the typical conditions for their adoption.

Table 5.2 Summary of the value chain patterns

Organization's purpose	Operating model	Who is typically responsible for other product and service management activities?	Typical reasons to adopt the value chain pattern
1. To support the core business of the company with effective and efficient technology solutions.	All activities of the ITIL Product and Service Lifecycle management from 'discover' to 'support'.	N/A	Use of internally developed digital products to perform core business activities and achieve competitive advantage.
2. To ensure efficient and reliable delivery of IT services based on third-party technology solutions.	Acquire, transition, operate, deliver, support.	Discover: business customers. Design, build: external vendors.	Use of standard digital products to enable and support business activities and ensure efficiency.
3. To ensure efficient and reliable delivery of IT services and coordination of third parties responsible for product development and operation.	Deliver, support.	Discover: business customers. Design, build: external vendors. Acquire, transition, operate: external managed service providers.	Use of standard digital products to enable and support business activities and maximize efficiency.
4. To provide digital products to individual users and small businesses.	All activities of the ITIL Product and Service Lifecycle management from 'discover' to 'support'.	N/A	Mass delivery of service based on internally developed digital products, as the main business of the organization.
5. To develop and ship software to meet specific customer's requirement.	Design, acquire, build, transition (partially).	Discover: customers. Transition: jointly with customers and/or third parties. Operate: customers or third parties. Deliver, support: customers.	Custom software development as a business.
6. To implement, operate, and support consumer's digital platform and software solutions.	Transition (partially). Operate, support.	Discover: customers. Design, acquire, build: software vendors or customers. Transition: jointly with customers and/or software vendors.	N/A

The value chain patterns organizations adopt define the management practices required to enable their digital product and service management activities. Section 5.5 introduces the ITIL management practices and Appendix A provides a quick reference guide to every practice.

In most cases, a value chain developed by an organization serves as a framework for multiple value streams. The concept of value streams and the role of value streams in organizations are described in Chapter 6.

5.5 Practices

The digital product and service management activities of an organization are enabled by management practices.



Management practice
Management practice is a set of organizational resources and capabilities designed and adopted for performing work or accomplishing an objective.

ITIL includes 34 management practices combined in two groups:

Product and service management practices: are specific to digital product and service management. They are key to the product and service management activities of an organization described in Chapter 4 and Section 5.4.

General management practices: can be applied to any product or service, as well as to general management activities of an organization. The ITIL Official Practice Guides emphasize the applicability of these practices to digital products and services. Many of the general management practices are supported by dedicated standards and bodies of knowledge. The ITIL Official Practice Guides demonstrate how these practices may be integrated in an organization's (service) value system, and provide a comprehensive overview of each practice.

Table 5.3 ITIL management practices

Product and service management practices	General management practices
• Availability management • Business analysis • Capacity and performance management • Change enablement • Deployment management • Incident management • Information security management • Infrastructure and platform 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 financial management • Service level management • Service request management • Service validation and testing • Software development and management	• Architecture management • Continual improvement • Knowledge management • Measurement and reporting • Organizational change management • Portfolio management • Project management • Relationship management • Risk management • Strategy management • Supplier management • Workforce and talent management

Appendix A provides Quick Reference Cards to all management practices, including:

- Practice purpose
- Practice success factors
- Key metrics
- Processes included in the practice
- Key roles
- Key automation tools

A detailed description of each management practice and practical recommendations on establishing the practices in an organization are provided in the Official Practice Guides.

5.5.1 ITIL Official Practice Guides

ITIL Official Books include 34 Official Practice Guides. Each guide follows the same structure and addresses the following aspects of the management practices:

Table 5.4 Structure and contents of the ITIL Official Practice Guides

Practice guide chapters	Contents
General information	• Purpose and description • Key terms and concepts • Scope • Practice success factors • Key metrics
Value streams and processes	• The processes and activities of the practice • The contribution of the practice to service value streams

Practice guide chapters	Contents
Organizations and people	• Roles, competencies, and responsibilities • Organizational solutions and teams (specific to the practice).
Information and technology	• Key information used by the practice • Automation and tooling, including recommendations for successful automation of the practice.
Partners and suppliers	• Dependencies of the practice on third parties • Support from third parties
Capability assessment and development	• Description of the capability levels according to the ITIL Maturity Model (see appendix Y) • Capability criteria for the practice • Recommendations for self-assessment of the practice capability level
Recommendations for the practice success	• Recommendations for successful development and application of the practice, mapped to the ITIL Guiding Principles.

The ITIL Official Practice Guides are available in the PeopleCert Plus eBooks library.

In addition to specific practice guides, ITIL offers a universally applicable *How to Implement* Official Book which can be used by any organization to establish and continually improve a product and service management system. Please note that the *How to Implement* Official Book will be replaced by the *ITIL Transformation (Version 5)* Official Book, which, together with its corresponding course, will be part of the ITIL Official Qualification Scheme (Version 5.0). An overview of the ITIL Transformation Model presented in this Official Book can be found in Appendix G.

5.6 Continual improvement

Continual improvement takes place in all areas of the organization and at all levels, from strategic to operational. Everyone involved in the management of products and services should keep continual improvement in mind and always look for opportunities to improve.

The continual improvement model applies to the value system in its entirety, as well as to all the organization's products, services, service components, practices, and relationships. To support continual improvement at all levels, the ITIL VS includes:

- the ITIL Continual Improvement Model, which provides organizations with a structured approach to implementing improvements (see Section 5.6.1 below)
- the continual improvement practice, helping organizations in their day-to-day improvement of digital products and services.
- the *ITIL Transformation* Official Book, enabling improvements to the organization's value system and its components.

5.6.1 ITIL Continual Improvement Model

Continual Improvement Model
A model which provides organizations with a structured approach to planning and implementing improvements.

The ITIL Continual Improvement Model can be used as a high-level guide to support improvement initiatives. Use of the model increases the likelihood that improvements will be successful, enables a strong focus on stakeholder value, and ensures that improvement efforts are linked back to the organization's vision. The model supports an iterative approach to improvement, by breaking work into manageable pieces, each with each own goal that can be achieved incrementally.

Figure 5.4 provides a high-level overview of the ITIL Continual Improvement Model.

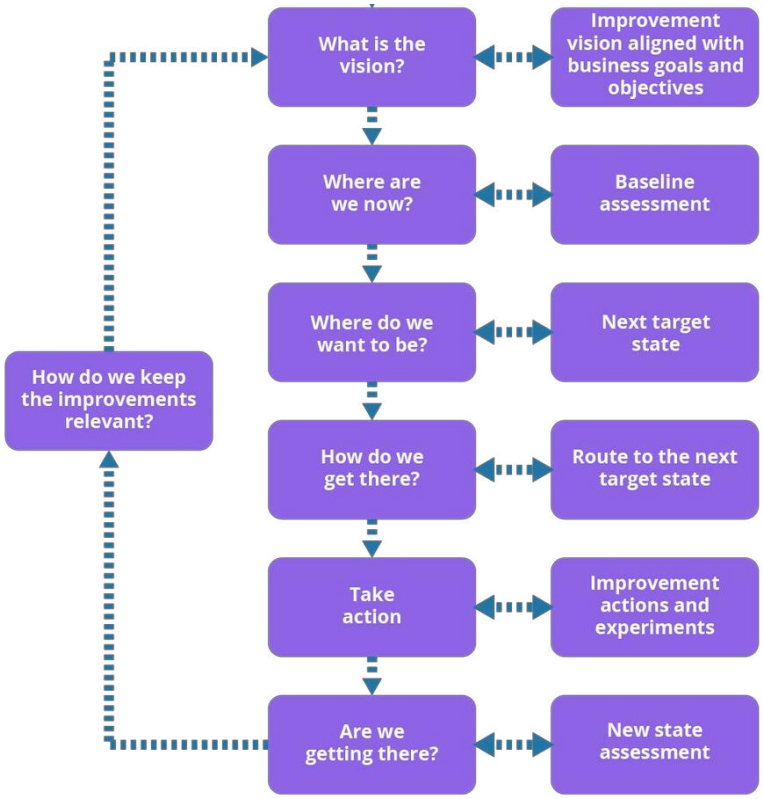


Figure 5.4 The ITIL Continual Improvement Model

It is important to remember that each step of the model may vary significantly in scope and detail, based on the subject and the type of improvement. The model can be used as a workflow map or as a high-level reminder of a solid thought process to ensure improvements are properly managed. The flow seeks to ensure that improvements are linked to the organization's goals and are properly prioritized, and that the actions taken to support these improvements produce sustainable results.

Logic and common sense should always prevail when using the continual improvement model. The steps of this model do not need to be executed in a linear sequence, and it may be necessary to re-evaluate and revisit a previous step along the way.

The model applies to situations of various complexity. Sometimes, the improvements are clear, the target state can be defined, and the actions required to achieve the target state are known and can be planned and executed. In other situations, the only thing that is clear is that the

current state is not optimal, and some improvements need to be made. However, the target state and the route towards it are yet to be found, and the only way to find them is to experiment. The ITIL Continual Improvement Model is helpful regardless of the level of complexity or uncertainty, but the improvement steps should be adjusted accordingly.

The following sections provide more detail on each step of the Continual Improvement Model. Additional information on the application of the model can be found in the *ITIL Continual Improvement* Official Practice Guide.

5.6.1.1 Step 1: What is the vision?



Each improvement initiative should support the organization's goals and objectives. The first step of the continual improvement model is to define the vision of the initiative. This provides context for all subsequent decisions and links individual actions to the organization's vision for the future.

This step focuses on two key areas:

- The organization's vision and objectives need to be translated for the specific business unit, department, team, and/or individual, so that the context, objectives, and boundaries for any improvement initiative are understood. The improvement should be linked to the organization's goals, objectives, and priorities.
- A high-level vision for the initiated improvement needs to be articulated and agreed.

The work within this step should ensure that:

- the high-level direction has been understood
- the planned improvement initiative is described and understood in the organization's context
- the key stakeholders and their roles are understood and support the improvement vision
- the expected value of the improvement is agreed by the stakeholders
- the role of the person or team responsible for the next steps of the improvement is clear, and they have authority to move the improvement forward.

If this step is skipped, improvements might only be optimized for the people or teams involved rather than the whole organization, or non-value-adding activities might become the sole focus of improvements. At the same time, improvements that should be prioritized may have insufficient visibility and support.

5.6.1.2 Step 2: Where are we now?



The success of an improvement initiative depends on a shared understanding of the starting point and the impact of the initiative.
An improvement can be thought of as a journey from Point A to Point B, and this step defines what Point A looks like. Point B may still be unknown, but a journey cannot be mapped out if the starting point is not understood.

A key element in this step is a current state assessment. Depending on the scope of improvement, this may be an assessment of existing products and services, including user perception of value received, people's competencies and skills, involved workflows, available information, and the capabilities of the available technological solutions.

Current state assessments should be done through objective measurement whenever possible. This will allow for an accurate understanding of the issues associated with the current state and, once the initiative is implemented, enable proper measurement of the level of improvement achieved by comparison with the initial state. If a good measurement system is in place, the

information to fulfil this step may already have been provided when the proposed improvement was initially documented. However, available metrics are rarely sufficient. What cannot be measured objectively can be assessed through stakeholders' stories and structured feedback. For example, an organization may capture unstructured and unsolicited stories about their products, behaviour, and overall image. While not always supported with objective measurement data, this feedback is often sufficient to form a shared understanding of the current state the organization wants to move away from.

If this step is skipped, the current state will not be understood and there will be no agreed baseline for the improvement. It will therefore be difficult to track and measure the effectiveness of the improvement activities, as the new state cannot be compared with the current one at a later point.

5.6.1.3 Step 3: Where do we want to be?



Just as the previous step (Step 2) describes Point A on the improvement journey, Step 3 aims to outline what Point B, the target state for the next step of the journey, should look like. A journey step cannot be mapped out if the destination, or at least the direction, is not clear.

In some cases, the first two steps provide enough information to understand the scope and nature of the distance to be travelled from the starting point to the achievement of the initiative's vision. In other cases, the route towards the vision cannot be planned and needs to be explored instead. Either way, the initial vision of the initiative is aspirational and unlikely to be achieved in full.

This step should define the next target or desirable state, described in a form of clear objectives supported by metrics and indicators, or in a less tangible form ("more stories like this, less stories like that"). In reality, a combination of the two are likely to be used. Improvement objectives can be set, along with critical success factors and key performance indicators.



Critical Success Factor (CSF)
Critical Success Factor (CSF) is a necessary precondition for the achievement of intended results.

Key Performance Indicator (KPI)
Key Performance Indicator (KPI) is a metric used to evaluate success in meeting an objective.

Where possible, the agreed objectives, CSFs, and KPIs need to follow what is known as the SMART principle. They should be specific, measurable, achievable, relevant, and time-bound. It is much easier to define the route of the improvement journey if the exact destination is known. It is important to note that the target state represents progress towards the vision, not the achievement of the entire vision.

However, in complicated and uncertain situations, defining a clear target state supported by SMART objectives and KPIs may be impossible. It may be clear that the current state is unacceptable yet remain unclear what the target state is or might be. In such situations, this step is about defining the direction of the improvement steps supported by criteria for assessment of their effect.

If this step is skipped, the target state and direction towards it will remain unclear. It will be difficult to plan improvement actions if the destination, or at least the direction, is unknown.

5.6.1.4 Step 4: How do we get there?

Now that the starting point and the direction of the improvement journey have been defined, a specific route or routes can be explored. Based on the understanding of the improvement vision and the current and target states, and combining that knowledge with subject matter expertise, a plan for addressing the challenges of the initiative can be created.



The plan for step 4 can be a straightforward and direct route to completing a single simple improvement, or it may be more exploratory. The most effective approach to executing the improvement may not be clear, and it will sometimes be necessary to design experiments that will test which options have the most potential.

Even if the path to follow is clear, it may be most effective to carry out the work in a series of iterations, each of which will move the improvement forward part of the way. With each iteration, there is an opportunity to check progress, re-evaluate the approach, and change direction if appropriate.

When the path is not clear, this step is used to identify relevant hypotheses and experiments that would prove or reject the relevant options. These experiments (conducted at the 'take action' step) may help clarify the target state and identify a more definitive action plan.

If this step is skipped, the execution of the improvement is likely to flounder and fail to achieve what is required of it. Failed improvements erode confidence and can make it difficult to get support for future improvements.

5.6.1.5 Step 5: Take action



In Step 5, the plan for the improvement is acted upon. Agreed actions and experiments can be conducted as a sequence, simultaneously, or independently. It is often appropriate to follow an agile approach by experimenting, iterating, changing directions, or even going back to previous steps.

Some improvements take place as part of a big initiative that makes a lot of change, whereas other improvements are small but significant. In some cases, a larger change is achieved through the implementation of multiple smaller improvement iterations. Even if the path to complete the improvement seemed clear when it was planned, it is important to remain open to change throughout the approach. Achieving the desired results is the objective, not rigid adherence to one view of how to proceed. It should be expected that actions and experiments conducted at this step will indicate the need for another iteration of the 'how do we get there?' and even of the 'where do we want to be?' steps.

During the improvement, there needs to be continual focus on measuring progress towards the vision and managing risks, as well as ensuring visibility and overall awareness of the initiative. ITIL practices such as Organizational Change Management, measurement and reporting, risk management and, of course, continual improvement, are important aids in achieving success in this step.

Once this step is completed, the work will be at the end point of the journey, resulting in a new current state.

5.6.1.6 Step 6: Are we getting there?

This step involves an assessment of the new current state to compare it with the agreed targets and with the baseline.



Too often, once an improvement plan is set in motion, it is assumed that the expected benefits will be achieved, and that attention can be redirected to the next initiative. In reality, the path to improvement is filled with various obstacles, so success must be validated.

For each iteration of the improvement initiative, both the progress (have the original objectives been achieved?) and the value (are those objectives still relevant?) need to be checked and confirmed. If the desired result has not been achieved, additional actions to complete the work are selected and undertaken, commonly resulting in a new iteration.

If no SMART objectives could be set at the previous steps, this step is used to assess the direction of progress. Are there indicators of the new current state being better than the original one, and closer to the agreed vision? If not, what should be done differently (back to step 2)? If yes, what can be done to reinforce the progress (back to step 3)?

If this step is skipped, it is hard to be sure whether there is progress, whether the desired or promised outcomes are being achieved, and any lessons from this iteration may be lost.

5.6.1.7 Step 7: How do we keep the improvements relevant?



Improvements provide valuable lessons throughout all steps of this journey. The journey should be continuously observed and reflected on to ensure that all improvement initiatives remain relevant in the constantly changing context. Continuous learning may result in improvement initiatives being changed, interrupted, or reprioritized, and every step of the improvement journey being reviewed and reiterated.

If improvement initiatives achieve the agreed targets, the organizational change management and knowledge management practices should be used to embed the changes in the organization and ensure that the improvements and changed behaviours are not at risk of reversion. Leaders and managers should help their teams to truly integrate new ways of working into their daily work and institutionalize new behaviours.

If the expected results of the improvement were not achieved, stakeholders need to be informed of the reasons for the failure of the initiative. This requires a thorough analysis of the improvement, documenting and communicating the lessons learned. This should include a description of what can be done differently in the next iteration, based on the experience gathered. Transparency is important for future efforts, regardless of the results of the current iteration. All deviations from the agreed plans, assumptions, and targets should be treated as opportunities to learn and improve, and no blame should be attached to these reviews.

If this step is skipped, then it is likely that improvements will remain isolated and independent initiatives, and any progress made may be lost over time. It may also be difficult to get support for future improvements and embed continual improvement in the organization's culture.

5.7 Summary

The ITIL VS describes how all the components and activities of the organization work together as a system to enable value creation through digital products and services. Each organization's value system has interfaces with other organizations, forming an ecosystem that facilitates value creation for the organizations, their customers, and other stakeholders.

The ITIL VS is a holistic model for the governance and management of digital products and services. It enables organizations to co-create value with consumers and partners. The ITIL VS

includes a model of the product and service management activities which form a value chain tailored to organization's purpose. The value chain is supported by a set of management practices that allow the organization to ensure quality of products and services throughout their lifecycle. The ITIL VS is guided by the ITIL Guiding Principles; the adaptability and continual improvement of the ITIL VS is enabled by the ITIL Continual Improvement Model.

CHAPTER 6 IDENTIFYING, MAPPING, AND MANAGING VALUE STREAMS

6.1 Why value streams

As discussed in Chapter 1, organizations are not the same. They play many roles in service relationships and manage digital products and services of different architecture. The product and service management activities described by the ITIL Product and Service Lifecycle Model are performed in various combinations defined by the organization's context.

Chapter 2 highlighted that it is not possible to design all processes in advance and thoroughly follow them in practice. Activities performed by teams and organizations form unique workflows that deviate from the pre-defined models to adapt to the current context.

Even if every process and procedure were fulfilled exactly as designed, they would not, by themselves, create value for service consumers and other stakeholders. The management practices and the processes they include contribute to the product and service management lifecycle activities in varying combinations. Even the high-level product and service management activities described in Chapter 4 should be executed in varying combinations and adapted to the context.

In other words, real-world workflows, although based on established processes and other workflows, are always unique and formed by many lower-level workflows and actions.



To manage the actual product and service management work as performed (rather than as designed or described in an operating model), and to ensure that this work creates value, organizations need to identify and map their value streams, analyse and continually improve them.

A value stream is a series of steps an organization undertakes to enable value for consumers through management of products and services.

Value streams:

- are the actual sequence of activities performed, rather than a predetermined blueprint
- include the flow of information and artifacts created, processed, and transferred during the activities
- enable value for a customer or another stakeholder
- cover an end-to-end flow of work information and artifacts across one or several organizations.

Value stream mapping and management aim to:

- focus on customer value and optimize the end-to-end flow for value creation
- visualize the flow of value enablement from start to finish
- identify and eliminate waste to maximize value for consumers and the organization
- identify and implement improvements to the flow of work.



Use of value stream mapping allows an organization to:
- ensure shared understanding of the value the organization aims to create
- achieve clarity of the ways the value is created by the organization
- optimize the flow of work and information, and improve quality of the outputs.

6.2 Value streams of digital organizations

Organizations involved in the digital product and service management activities may play different roles. Section 5.4.2 described six value chain patterns commonly adopted by digital organizations. These patterns are defined by the organization's purpose and include product and service management activities relevant to the organization's operating model.

To create value for service consumers, organizations may:

- create digital products, and deliver and support digital services
- create digital products and ship them to customers (with another organization responsible for delivering and supporting the services)
- operate and support digital products created by other organizations
- deliver services based on products created and operated by other organizations.

Other scenarios are possible, but they share a common feature: organizations select the product and service management activities they will be responsible for, and this defines their service offering. Depending on this choice, organizations act as service providers to the consumers of the digital services, or to another service provider. This may seem complicated but it is a common practice: an internal technology team may be responsible for the quality of services delivered to the business teams of the company, while delegating some of the product and service management activities to a software vendor and/or to a managed service provider.

These variations in operating models enable a variety of value streams. Each organization has multiple value streams which depend on internal capabilities and external services.

From a single organization's perspective, value streams can be categorized as 'core' and 'enabling'.



Core value stream
Core value stream is a value stream that enables value for consumers in a form intended by the organization's operating model.

By identifying the value chain patterns in terms of the product and service lifecycle activities, organizations prepare for identification, observation, documentation, and analysis of their core value streams.

Along with the core value streams, organizations use enabling value streams aimed at internal customers that support the core value streams. Common examples include procurement of additional resources for service delivery or onboarding of a new supplier.



Enabling value stream
Enabling value stream is a value stream that enables value for internal customers to support the organization's core value streams.

Note: these categories may be cascaded depending on the scope of 'organization' in each case. For example, delivering a digital service for preparing and executing payroll may be a core value stream for the company's technology department, while even the payroll itself may be considered a supporting value stream that enables the company to perform its core business activities for its customers.

6.3 Value stream mapping

Value stream mapping is a technique for the visual representation and analysis of value streams. It originated from the industrial setting and was originally focused on the flow of materials and information. Applied to the digital-first environment, it is focused on the flow of information, work, and, eventually, the value created for a service consumer.

Value stream mapping includes the following steps:

- value stream identification
- mapping of the 'as-is' value stream
- analysing the value stream
- mapping a 'to-be' value stream
- planning and implementing improvements.

Appendix E provides a brief description of these steps.

6.4 Value stream management

Value stream mapping is a technique that is relatively easy to start and it also provides tangible results in the short term. However, it does not have a sustainable effect if performed as a one-off exercise. Value streams keep evolving, and so does the context they are performed in. To maintain high quality of services and continually optimize the flow of work, organizations shift to value stream management, which means both 'management of value streams' and 'management through value streams'.

Value stream management involves an ongoing focus on how work is done, as well as the analysis and improvement of the organization's value streams. It also includes an understanding of the organization's value stream network, where multiple value streams involve multiple practices and external dependencies under different and constantly changing circumstances. This understanding is supported by automation and measurement.

Since value streams are the de facto flows of work, information, and artifacts, they exhibit high variability and cannot be managed directly. Continual improvement of an organization's value streams can be achieved by improving the management practices that enable and support the value streams, as well as the organization's products and services. In many cases, the improvement of a management practice has impact on multiple value streams. For example, by optimizing authorization of changes (in the change enablement practice), the organization can improve the flow of work in all value streams that include changes to products and services.



Value streams are enabled and supported by the organization's practices and value chain. Value stream mapping allows organizations to identify, map, and analyse their value streams, as well as identify and prioritize improvement opportunities. However, continual improvement of value streams is achieved indirectly by improving the value chain and the management practices.

Adopting continual value stream management may be a significant transformation for an organization, requiring major leadership, cultural, organizational, and technology changes. Transformations of this scale are described in the *ITIL Strategy* Official Book and supported by *ITIL Transformation*.

CHAPTER 7
NEXT STEPS

7.1 Improving organizations

As explained in Chapter 1, this book was designed and written to serve four purposes:

- Introduce readers to the key concepts of digital product and service management.
- Provide a foundational framework for other publications and their practical application.
- Serve as a reference guide for daily work of digital product and service management.
- Help develop an effective, adaptable, and sustainable governance and management system for digital technology in organizations of any size, complexity, and business model.

This chapter describes how ITIL Foundation and other ITIL publications can be used to achieve organizational and personal goals in digital product and service management.

7.1.1 Designing a value system

Organizations designing their value system typically start by agreeing the purpose, proceed to identifying the relevant product and service management activities and management practices, and move on to designing a value chain, acquiring the needed resources and developing the required capabilities.

ITIL supports this flow by providing:

In this book:

- a holistic product and service lifecycle model (Chapter 4)
- examples of value chain patterns for internal and external product vendors and service providers (Section 5.4)
- a description of every value chain activity (Chapter 4)
- a mapping of value chain activities and management practices (Appendix B)
- quick reference cards (Appendix A) for the 34 Official Practice Guides
- a description of the ITIL Transformation Model (Appendix G).

In other publications:

- a practical guide on defining and implementing digital product and service strategy (*ITIL Strategy* Official Book)
- detailed practical guidance on the value chain activities (*ITIL Product* and *Service* Official Books) and management of service relationships and stakeholder experience (*ITIL Experience* Official Book)
- comprehensive Official Practice Guides (Membership)
- comprehensive guidance (*ITIL Transformation)* on planning and managing transformations in the organization.

7.1.2 Evaluating and improving a value system

Most organizations already have a digital product and service management system in place and some have an established product and service governance. Most organizations' management practices and systems can be improved, not only because they are likely to have flaws, but also because the needs of customers and organizations are continuously evolving. What is optimal today will need to change tomorrow.

Many organizations still operate and manage in silos, and their improvement initiatives are often isolated and have only limited, local impact. To support continual improvement of product and

service management at all levels, from specific practices to the overall value system, ITIL provides:

In this book:

- an introduction to value stream mapping (Chapter 6)
- a description of every value chain activity (Chapter 4)
- a mapping of value chain activities and management practices (Appendix B)
- examples of value chain patterns for internal and external product vendors and service providers (Section 5.4)
- a holistic product and service lifecycle model (Chapter 4)
- quick reference cards (Appendix A) for the 34 Official Practice Guides
- a description of the ITIL Maturity Model (Appendix F)
- a description of the ITIL Transformation Model (Appendix G).

In other publications:

- comprehensive Official Practice Guides (Membership)
- comprehensive guidance (*ITIL Transformation* Official Book) on planning and managing transformations in the organization
- detailed practical guidance on the value chain activities (*ITIL Product* and *ITIL Service* Official Books).

7.1.3 Improving value for stakeholders

Despite significant efforts invested in improvements of product and service management, some organizations struggle to ensure value for service consumers and other stakeholders. Product vendors often fall into the 'build trap' by focusing primarily on shipment of new features, without sufficient understanding of their value for stakeholders. Service providers often prioritize formal fulfilment of service level agreements with little consideration of the user experience and value of services. These and other common issues are often related to insufficient understanding of service relationships, poor stakeholder management, and lack of focus on value.

ITIL helps overcome these challenges and improve value for stakeholders by providing:

In this book:

- a set of guiding principles (Chapter 5)
- a structured explanation of service relationships, service value, and service quality (Chapter 3)
- a description of the key service consumer roles and their needs (Chapter 3)
- a holistic product and service lifecycle model (Chapter 4)
- quick reference cards (Appendix A) for the 34 Official Practice Guides
- a description of the ITIL Transformation Model (Appendix G).

In other publications:

- a practical guide on defining and implementing a digital product and service strategy (*ITIL Strategy* Official Book)
- detailed practical guidance on the service journey and management of stakeholder experience (*ITIL Experience* Official Book)
- comprehensive Official Practice Guides (Membership)
- comprehensive guidance (*ITIL Transformation* Official Book*)* on planning and managing transformations in the organization.

7.2 Improving professional capabilities

7.2.1 Professional development

ITIL offers practical guidance for product and service management practitioners, managers, and leaders through the Official Books and Practice Guides available in the PeopleCert Plus eBooks library. Referring to this guidance and applying it within an organization is the most affordable and accessible way to realize the benefits of ITIL. Once an organization or individual is familiar with the ITIL product and service management framework and the scope of the official publications, this knowledge can be applied within relevant areas of responsibility and used to promote ongoing professional and career development.

To support this journey, PeopleCert offers official training and certification. Courses, exams, and certifications are designed to support practitioners, managers, and leaders; however, these groups may have significant overlaps, depending on the organizational structure and individual professional journeys.

Practitioners (team members or team leads) can benefit from courses based on the Official Practice Guides. These courses provide deep and practical insights on the design, improvement, and execution of specific management practices.

Managers (team leads to executives) can find valuable insights on establishing and improving the organization's product and service management system in the courses based on the three Official Books: *ITIL Product*, *ITIL Service*, and *ITIL Experience*. They can choose the course relevant to their scope of interest and responsibility. Relevant practices should also be considered where improvement is needed within the organization. Finally, studying the *ITIL Transformation* Official Book can help prepare individuals to apply their ITIL knowledge to drive meaningful change within their organizations.

Leaders (formal and informal, from product managers to board members) will benefit from the *ITIL Strategy* Official Book and the course based on it. As with managers, *ITIL Transformation* Official Book provides support for implementing the strategic decisions inspired by the *ITIL Strategy* Official Book. For transformation in a particular part of a management system, the respective publications focused on digital products, digital services, or digital experience provide useful insights.

7.2.2 PeopleCert Plus

Whether working in ITSM or Project and Programme Management, professionals can benefit from PeopleCert Membership, which provides access to valuable ITIL, PRINCE2, and DevOps resources to support continued growth and expertise. The next step in a professional journey begins with continued growth and learning.

Becoming a PeopleCert Plus member helps professionals keep their certifications up to date through a Continuous Professional Development (CPD) programme, requiring 20 CPD points annually for three consecutive years. Members gain access to over 150 Official eBooks on ITIL, PRINCE2, and DevOps, enhancing their knowledge at their own pace. Membership offers digital badges to boost professional visibility and credibility. Additionally, members can confidently prepare for exams with free mock exams and the Take^2 retake option.

For ITIL-certified professionals committed to long-term growth and relevance in the IT service management field, **PeopleCert Plus Membership** offers substantial value beyond its core features. While CPD tracking, digital badges, and access to eBooks are strong foundational benefits, membership goes further in empowering professionals to lead in a dynamic industry.

Members gain early access to updates on ITIL frameworks and related methodologies, ensuring they remain ahead of evolving best practices. Exclusive discounts on training and exams reduce the financial barrier to continued education, supporting a culture of lifelong learning. The programme also fosters global peer networking, enabling members to connect with practitioners and thought leaders across industries.

In addition, career development tools such as resume support and curated industry insights position members to take strategic steps in advancing their careers. Priority customer support further enhances the experience by resolving issues quickly and efficiently. This is an underrated but highly practical benefit for busy professionals.

In short, PeopleCert Plus is not just a membership; it is a strategic investment in professional credibility, agility, and long-term career success for committed ITIL practitioners.

7.3 Beyond ITIL

While ITIL® provides the framework for effective digital product and service management, no single framework is enough for successful work in today's diverse business and technology ecosystems. Certifications such as PRINCE2® (for agile project, programme, and portfolio management) and those from the DevOps Institute® (DOI, for agile, continuous product development and operation) offer powerful extensions to the ITIL framework. These certifications enable managers and practitioners to deliver changes of various scale and velocity, which is increasingly critical in modern digital-first environments. For ITIL professionals, branching into these complementary domains deepens operational versatility and positions them as strategic enablers of end-to-end value creation across the organization.

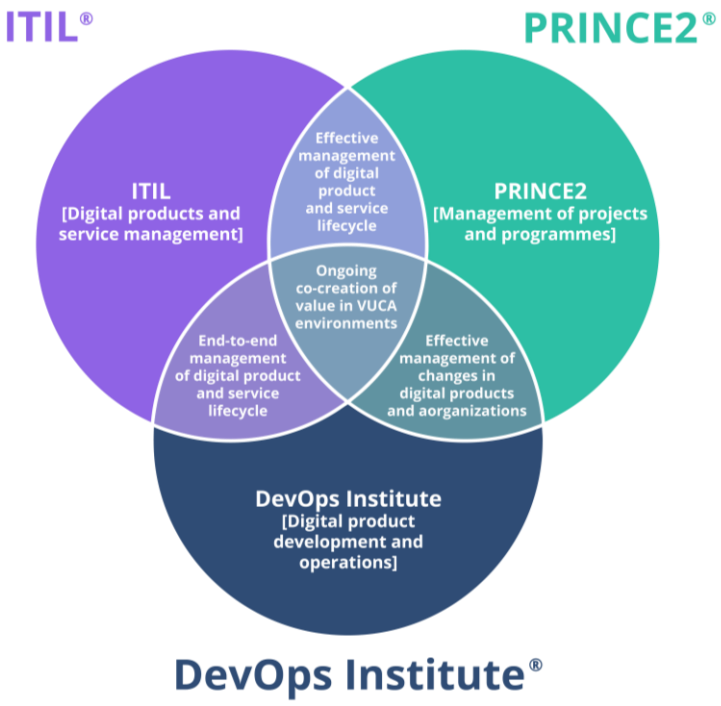


Figure 7.1 Complementary roles of ITIL, PRINCE2 and DevOps

ITIL, PRINCE2, and DevOps share the foundational principles of focusing on value, progressing iteratively with feedback, and collaborating in a transparent and collaborative way.
The connection between Lean, Agile, DevOps, and ITIL is undeniable, and organizations can benefit from using them together.

7.3.1 DevOps

As organizations continue to evolve their digital capabilities, the need to balance stability with speed has never been greater. While ITIL provides a robust framework for digital product and service management , many enterprises are now integrating DevOps practices to accelerate product development and optimize product operation. DevOps is a valuable complementary approach which should be used as a source of detailed practical advice enabling such activities of the ITIL Product and Service Lifecycle as 'discover', 'design', 'acquire', 'build', 'transition', and 'operate'. Combined with the relevant ITIL Official Practice Guide, DevOps practices and techniques provide organizations with a comprehensive set of methods and techniques.

To support this integration, PeopleCert offers a suite of DevOps certifications developed by DevOps Institute® (DOI). These certifications, including DevOps Foundation, DevOps Leader, Site Reliability Engineering (SRE), DevSecOps, and others, equip professionals with the mindset, skills, and practices to thrive in fast-moving, complex IT environments. For ITIL managers and practitioners, DOI certifications offer a natural progression. By combining ITIL's framework and guidance with DevOps' methods and techniques, organizations can develop and operate more resilient, adaptive, and customer-focused digital products and services.

7.3.2 PRINCE2

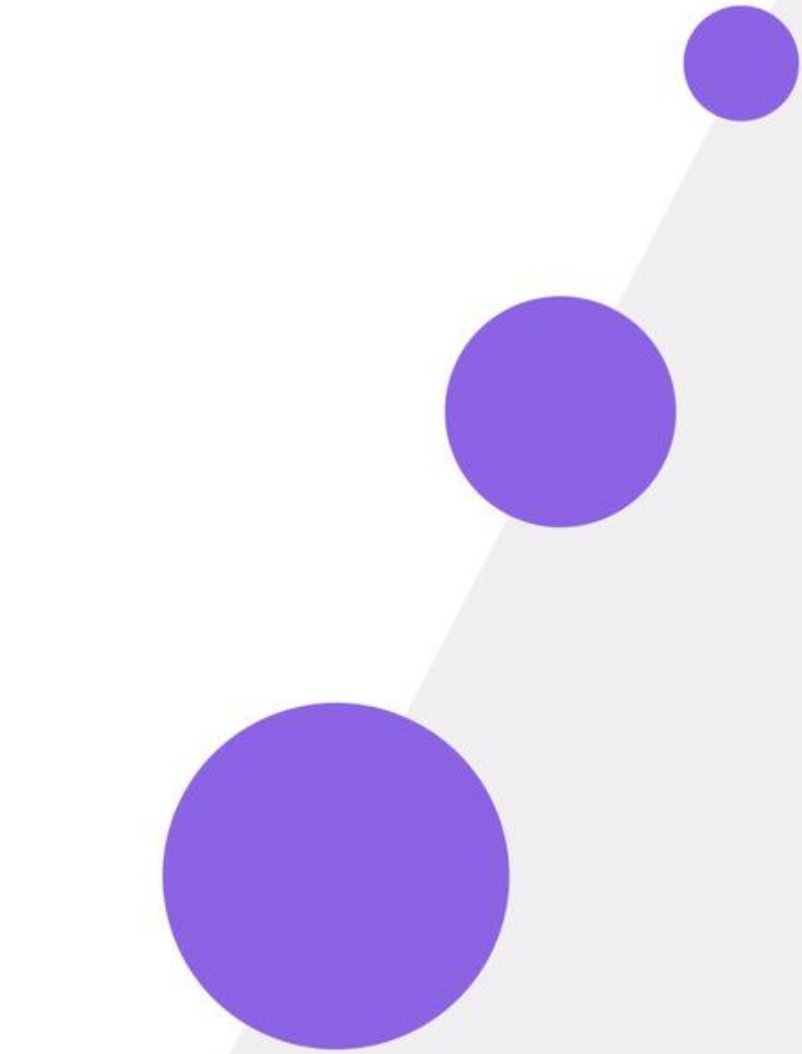
ITIL includes Official Practice Guides to project management and portfolio management; the former also addresses programme management. They offer sufficient information and practical advice for understanding the role of the respective practices in the ITIL VS, and support integration of these practices into organization's value streams. However, professional project managers, programme managers, and portfolio managers need a more detailed comprehensive body of knowledge. PRINCE2 addresses this need.

The PRINCE2 portfolio is a collection of globally used best practice guidance and techniques for successful project, programme, and portfolio management. PRINCE2 certifications enhance professional career opportunities by providing structured yet flexible and easy-to-follow methods and techniques to address today's organizational challenges. While ITIL focuses on the digital product and services management, PRINCE2 equips professionals with the tools to manage projects that implement or transform those products and services, as well as changes to the value system.

PRINCE2 is the **language of success** for any professional in this field. PRINCE2 modules cover the following topics:

- **PRINCE2 Project Management:** a globally recognized, structured project management method that provides clear and practical guidance for managing projects effectively, supporting successful outcomes.
- **PRINCE2 Agile:** a flexible approach that combines PRINCE2's structured project management method with agile techniques, enabling adaptive and iterative project delivery.

- **PRINCE2 Programme Management:** a structured approach for managing and delivering programmes, focused on achieving strategic objectives through effective governance, alignment, and control.
- **PRINCE2 Portfolio Management:** best-practice guidance for managing a portfolio of projects and programmes, aimed at aligning projects with organizational strategy to maximize value and realize benefits.
- **PRINCE2 Risk Management:** best-practice guidance on identifying, assessing, and controlling risks across an organization, enhancing decision-making and resilience through structured risk management practices.
- **PRINCE2 Project, Programme, Portfolio Office Management:** provides best-practice guidance on establishing and managing portfolio, programme, and project offices to support effective decision-making, governance, and delivery of strategic objectives.



APPENDIX

APPENDIX A | Practice Quick Reference Cards

Architecture management

Purpose: provide an understanding of all the different elements that make up an organization.

To fulfil the purpose we need to:

- ensure the organization's strategy is supported with a target architecture
- ensure the organization's architecture is continually evolving to the target state.

Processes

Architecture governance:
Analyse the organization's requirements → Develop and agree architecture vision → Review the architecture.

Development of a target architecture and roadmap:
Identify requirements → Document current architecture → Develop target architecture → Design standards, frameworks, and guidelines→ Design, agree, and communicate architecture roadmap.

Ongoing architectural control:
Identify architecturally significant plans and events → Check for conformance to the target architecture → Escalate non-conformance→ Review progress against the architecture roadmap.

Software tools

- Enterprise architecture management tools
- Knowledge and document management tools
- Analysis and reporting tools
- Capacity management tools, CMS tools
- Risk management tools
- Collaboration and communication tools
- Workflow and task management tools
- Monitoring and event management tools
- Solution design and development tools

Recommendations for the practice success:

- Align with business strategy.
- Embrace agility and continual improvement, human centricity.
- Build strong relationships.
- Focus on the right level of granularity.
- Leverage existing frameworks and tools.
- Champion data governance and integration.
- Embrace security and privacy.
- Measure and communicate value.
- Foster a culture of innovation.

Key metrics

- Fulfilment of target architecture requirements
- Impact of architectural constraints on strategy
- Target architecture completeness and quality
- Unassessed architecturally significant changes
- Projects/changes not aligned with target architecture
- Progress on architecture roadmap implementation

Key roles specific to the practice

- Architect role
- Architecture board

Key terms

Architecture principles: a set of norms and rules for the use and deployment of all resources and assets across an organization.

Interoperability: the ability of systems, applications, services, or any other architectural component to function together in a coordinated way.

Availability management

Purpose: ensure that services deliver the agreed levels of availability to meet the needs of customers and users.

To fulfil the purpose we need to:

- establish a shared view of target service levels
- identify availability requirements
- measure, assess, and report service availability
- treat service availability risks.

Processes

Managing product and service availability:
Analyse requirements → Propose and verify solution design → Support and verify solution testing and implementation → Support and verify monitoring and reporting → Analyse data and initiate improvements.

Measuring and reporting availability:
Analyse availability measurement and reporting needs and capabilities → Agree availability measurement and reporting requirements → Design availability measurements and reports→ Implement availability measurement and reporting → Review availability measurement and reporting.

Software tools

- Automated testing tools
- Workflow and task management tools
- Business process modelling tools
- Availability and capacity modelling and management tools
- Collaboration and communication tools
- Architecture management tools
- Monitoring and event management tools
- Analysis and reporting tools
- Work planning and prioritization tools
- Knowledge management tools
- Risk management tools
- Service catalogue tools, CMDB tools

Recommendations for the practice success:

- Understand service consumer needs and expectations.
- Understand legal and regulatory requirements.
- Don't over-engineer.
- Keep improving service availability without significant cost.
- Automate availability controls.
- Integrate practice into the organization's value streams.

Key metrics

- Products/services with documented availability criteria, metrics
- Critical products/services with SLA-based availability requirements
- Timely updates to availability requirements
- Products/services monitored for availability and performance
- Products/services included in availability reporting
- Minimum time between failures
- Number of service disruptions
- Total downtime over the period
- Maximum service outage
- MTRS
- Effective availability controls
- Availability controls tested
- Ratio between actual losses and expected losses

Key roles specific to the practice

- Availability manager

Key terms

Availability: the ability of an IT service or other configuration item to perform its agreed function when required.

Business analysis

Purpose: analyse a part or the entirety of a business, define its needs, and recommend solutions to address these needs and/or solve a business problem.

To fulfil the purpose we need to:

- establish and continually improve an organization-wide approach to business analysis to ensure that it is conducted in a consistent and effective manner
- ensure that current and future needs of the organization and its customers are understood, analysed, and supported with timely, efficient, and effective solution proposals.

Processes

Design and maintenance of a business analysis approach:
Analyse the organization and requirements → Develop and agree a business analysis approach → Communicate and adopt the business analysis approach → Review the business analysis approach.

Business analysis and solution identification:
Elicit and analyse information from stakeholders → Define solution options and identify the recommended solution → Support solution implementation and delivery → Assess solution performance and value.

Software tools

- Workflow and task management tools
- Solution design and development tools
- Service catalogue tools
- Knowledge and document management tools
- Collaboration and communication tools
- Architecture management tools
- Analysis and reporting tools

Recommendations for the practice success:

- Engage with internal and external stakeholders.
- Maintain ownership of requirements and solutions.
- Use analysis to support product/service changes.
- Reuse requirements and solutions when suitable.
- Integrate requirements and development tools.
- Align analysis with strategy, goals, and culture.
- Conduct continuous business analysis.
- Assess solutions based on actual business results.

Key metrics

- Satisfaction with needs understanding and solution relevance
- Deviations from strategy
- Cost and risk of business analysis approach
- Satisfaction with proposed solutions
- Value realized from implemented solutions (benefits, costs, risks)
- Timeliness of analysis and solution proposals
- Number/impact of identified and proposed solutions
- Total downtime over the period
- Maximum service outage
- MTRS
- Effective availability controls (%)
- Availability controls tested
- Actual vs. expected loss ratio

Key roles specific to the practice

- Business analyst

Key terms

Utility: the functionality offered by a product or service to meet a particular need. Utility can be summarized as 'what the service does' and can be used to determine whether a service is 'fit for purpose'.

Warranty: assurance that a product or service will meet agreed requirements. Warranty can be summarized as 'how the service performs' and can be used to determine whether a service is 'fit for use'.

Experience: the sum of the functional and emotional interactions with a service and provider as perceived by a stakeholder.

Capacity and performance management

Purpose: to ensure that services achieve agreed and expected performance and satisfy current and future demand in a cost-effective way.

To fulfil the purpose we need to:

- identify service capacity and performance requirements
- measure, assess, and report service performance and capacity
- treat service performance and capacity risks.

Processes

Managing product and service capacity and performance:
Analyse capacity and performance requirements → Propose and verify solution design → Support and verify solution testing and implementation → Support and verify monitoring and reporting of capacity and performance → Resource and capacity provisioning → Analyse capacity and performance data and initiate improvements.

Measuring and reporting capacity and performance:
Analyse capacity and performance measurement and reporting needs and capabilities → Agree capacity and performance measurement and reporting requirements → Design capacity and performance measurements and reports → Implement capacity and performance measurement and reporting → Review capacity and performance measurement and reporting.

Software tools

- Analysis and reporting tools
- Asset management tools
- Business process modelling tools
- Availability and capacity monitoring and management tools
- Collaboration and communication tools
- Architecture management tools
- Financial management systems
- Knowledge and document management tools
- Monitoring and event management tools
- Orchestration and integration platforms
- Remote administration, diagnosis, deployment, and other infrastructure and software management tools
- Service catalogue tools
- Service configuration management tools
- Workflow and task management tools

Recommendations for the practice success:

- Understand consumer needs and legal requirements.
- Avoid over-delivering unnecessary capacity/performance.
- Improve performance when cost-effective.
- Monitor end-to-end service performance.
- Embed capacity and performance management in value streams.

Key metrics

- Products and services with capacity and performance requirements documented in SLA
- New/changed services meeting capacity and performance SLA
- Timely updates on capacity/performance requirements and criteria during major changes
- Business cases for new component aligned with performance requirements
- Reduction in use of legacy components causing SLA breaches
- Percentage of services with:
  - Defined capacity/performance metrics
  - Active monitoring
  - Inclusion in capacity/performance reports
- Enacted improvement initiatives logged by capacity management
- Unplanned capacity/performance upgrades
- Actual vs. expected losses due to insufficient capacity/performance

Key roles specific to the practice

- Capacity manager

Key terms

Performance: a measure of what is achieved or delivered by a system, person, team, practice, or service.

Utilization: the extent to which a resource is being used to generate useful output.

Change enablement

Purpose: to maximize the number of successful service and product changes by ensuring that risks have been properly assessed, authorizing changes to proceed, and managing the change schedule.

To fulfil the purpose we need to:

- ensure that changes are realized in a timely and effective manner
- minimize the negative impacts of changes
- ensure stakeholder satisfaction
- meet change-related governance and compliance requirements.

Processes

Change enablement planning and optimization:
Change enablement initiation → Change review and planning → Change model and procedure improvement initiation → Change model and procedure update communication.

Change lifecycle management:
Change registration → Change assessment → Change authorization → Change planning → Change realization control → Change review and closure.

Software tools

- Workflow and collaboration tools
- Knowledge management tools
- Work planning and prioritization
- Analysis and reporting tools
- Orchestration tools

Recommendations for the practice success:

- Make sure the practice enables changes, rather than restricts them.
- Make sure the reasons for changes and success criteria are understood by all stakeholders.
- Delegate authority.
- Leverage automation capabilities as much as possible.
- Clarify dependencies and design efficient integrations.
- Do not unnecessarily increase the complexity of changes.
- Avoid or remove irrelevant bureaucracy, add sought-after efficiency step by step.
- Don't forget the pre-authorization stages.

Key metrics

- Satisfaction with change outcomes and timeliness
- Success and acceptance rate
- TPI of change (individual and aggregated)
- Change realization time per model
- Incidents related to change (impact, number, duration)
- Changes as sources of errors/problems
- Satisfaction with change procedures and communication
- Satisfaction with individual change realization
- Compliance and noncompliance changes
- Change-related compliance incidents

Key roles specific to the practice

- Change manager
- Change coordinator
- Change authority

Key terms

Change: the addition, modification, or removal of anything that could have a direct or indirect effect on products and services.

Standard change: a low-risk, pre-authorized change that is well understood and fully documented, and which can be implemented without needing additional authorization.

Normal change: an unknown, medium, or high risk change that requires additional authorization for planning and control.

Emergency change: a change that must be introduced as soon as possible.

Change authority: a person or group responsible for authorizing a change.

Request for Change (RFC): a description of a proposed change used to initiate change enablement.

Change model: a repeatable approach to the management of a particular type of change.

Continual improvement

Purpose: to align the organization's practices and services with changing business needs through the ongoing improvement of products, services, practices, or any element involved in the management of products and services.

To fulfil the purpose we need to:

- establish and maintain an effective approach to continual improvement
- ensure effective and efficient improvement across the organization.

Processes

Managing a common approach to continual improvement:
Analyse the organization's requirements, culture, strategy, and stakeholders → Identify relevant and valuable models and methods → Define and agree the continual improvement approach → Communicate and integrate the continual improvement approach → Review the continual improvement approach.

Managing continual improvement initiatives:
Identify and log improvement opportunities → Assess, prioritize, and approve improvement initiatives → Plan improvement initiatives → Facilitate the implementation of improvement initiatives → Measure and evaluate the results of improvement initiatives.

Software tools

- Workflow management and collaboration tools
- Analysis and reporting tools
- Work planning and prioritization tools
- Knowledge management tools
- Survey tools

Recommendations for the practice success:

- Foster and embed continual improvement culture.
- Leverage data-driven decision-making and automation tools.
- Set clear goals and prioritize initiatives by business value.
- Plan to realize value from each initiative.
- Encourage cross-functional collaboration with stakeholders.
- Regularly review the initiatives.

Key metrics

- Satisfaction with value from improvement initiatives
- Awareness and adoption of continual improvement culture
- Economic value metrics (ROI, NPV, etc.) and value on investment
- Successful improvement initiatives
- Initiatives delivered on time, within cost, and as planned
- Initiatives where risks/outcomes outweighed benefits
- Continual improvement productivity index

Key roles specific to the practice

- Continual improvement manager

Key terms

Improvement: a deliberately introduced change that results in increased value for one or more stakeholders.

Improvement register: a database or structured document used to record and manage improvement initiatives throughout their lifecycles.

Deployment management

Purpose: to move new or changed hardware, software, documentation, processes, or any other component to live environments.

To fulfil the purpose we need to:

- establish and maintain effective approaches to the deployment of services and service components across the organization
- ensure the effective deployment of services and service components in the context of the organization's value streams.

Processes

Deployment model development and improvement:
Deployment model planning → Deployment model implementation → Deployment model testing → Deployment review and deployment records analysis → Deployment model improvement initiation → Deployment model update and communication.

Deployment lifecycle management:
Deployment planning → Verification of the service components → Verification of the target environments → Deployment execution → Deployment verification.

Software tools

- Workflow management and collaboration tools
- Work planning and prioritization tools
- Deployment, CI/CD tools
- Environment configuration and management tools, CMDB tools

Recommendations for the practice success:

- Automate the deployment pipeline.
- Integrate build, test, and deployment activities.
- Continuous phased deployment.
- Leverage Infrastructure as code.
- Demonstrate business value.

Key metrics

- Stakeholder satisfaction with change rate
- Adoption of deployment approach
- Partner/consumer alignment with deployment
- Deployment-related audit/compliance issues
- Satisfaction with deployment lead time
- Successful deployment rate/errors
- Incidents related to deployments
- Adherence to deployment schedule
- Deployment backlog throughput
- Satisfaction with deployment quality

Key roles specific to the practice

- Deployment manager
- Deployment practitioner

Key terms

Deployment: the movement of any service component into any environment.

Environment: a subset of the IT infrastructure that is used for a particular purpose.

Continuous integration: integrating, building, and testing code within the software development environment.

Continuous delivery: continuous delivery means that built software can be released to production at any time.

Continuous deployment: changes go through the pipeline and are automatically put into the production environment.

Financial management

Purpose: to support the organization's strategies and plans for service management by ensuring that the organization's financial resources and investments are being used effectively.

To fulfil the purpose we need to:

- ensure that the organization's service financial management supports its overall strategy and stakeholder requirements
- ensure that reliable financial information is available as needed to support decision-making.

Processes

Managing the organization's approach to service financial management:
Analyse stakeholder requirements → Define and agree the service financial management approach → Implement the service financial management approach → Review and adjust the service financial management approach.

Financial planning:
Plan and prepare the budgeting process → Collect and analyse data → Compile the budgets > Communicate and agree the budgets → Monitor and control costs and income → Budget review and reporting.

Management accounting:
Identify and capture costs → Select a cost allocation model → Follow the cost allocation model → Manage exceptions → Provide standard and tailored reports.

Economic modelling:
Identify involved resources and their relations → Identify costs and cost drivers → Develop and test a resource-based costing model → Automate and communicate the resource-based costing model → Provide pricing recommendations

Software tools

- Analysis and reporting tools
- Asset management tools
- Collaboration and communication tools
- Contract management tools
- Financial Management System (FMS)
- Knowledge and document management tools
- Orchestration and integration platforms
- Procurement systems
- Service catalogue tools, CMDB tools
- System dynamics simulation software
- Workflow and task management tools

Recommendations for the practice success:

- Set clear scope and objectives.
- Identify external requirements early.
- Engage stakeholders effectively.
- Assess current service management practices state.
- Estimate required data volume.
- Ensure data integrity and accuracy.
- Adopt a holistic financial management approach.

Key metrics

- Stakeholder satisfaction with financial management
- Blocked strategic decisions due to ineffective financial management
- Audit findings on financial management
- Stakeholder satisfaction with financial information
- Incorrect/missing financial info
- Overhead costs as percentage of total costs

Key roles specific to the practice

- Service financial manager
- Service financial authority

Key terms

Cost: the amount of money spent on a specific activity or resource.

Cost type: the highest level of category to which costs are assigned in budgeting and accounting.

Capital costs or capital expenditure (Capex): costs of purchasing or creating financial assets, such as buildings, computer equipment or software products.

Operational costs or operational expenditure (Opex): costs an organization incurs through normal business operations, such as payroll and payments for supplier services.

Incident management

Purpose: to minimize the negative impact of incidents by restoring normal service operation as quickly as possible.

To fulfil the purpose we need to:

- detect incidents early
- reslove incidents quickly and efficiently
- continually improve upon incident management.

Processes

Incident handling and resolution:
Detection → Registration → Classification → Diagnosis → Diagnosis → Closure

Periodic incident review:
Review → Imrovement initiation → Communication of updates

Software tools

- Monitoring and event management
- Worklflow andf collaboration tools
- Knowledge, CMDB tools
- Remote admin and software tools
- Ticketing/workflow systems
- Reporting and survey tools

Recommendations for the practice success:

- Look at the incidents from the service consumer perspective.
- Gather and reuse data.
- Understand, manage and improve the incident resolution value stream, not only the incident management practice.
- Develop the practice continually but do not overcomplicate it.
- Adjust for complexity.
- Demonstrate business value.

Key metrics

- Time to detect
- Detecting via monitoring
- Diagnosis time
- Reassignments
- First-time evolution
- Resolved automatically (%)
- User satisfaction
- Using known solution/models (%)
- Trend improvements

Key roles specific to the practice

- Incident manager
- Major incident manager

Key terms

Incident: an unplanned interruption to a service or reduction in the quality of a service.

Workaround: a solution that reduces or eliminates the impact of an incident or problem for which a full resolution is not yet available. Some workarounds reduce the likelihood of incidents.

Swarming: a technique for solving various complex tasks. In swarming, multiple people with different areas of expertise work together on a task until it becomes clear which competencies are the most relevant and needed.

Prioritization: an action of selecting tasks to work on first when it is impossible to assign resources to all tasks in the backlog.

Information security management

Purpose: to protect the information needed by the organization to conduct its business.

To fulfil the purpose we need to:

- develop and manage information security policies and plans
- mitigate information security risks
- exercise and test security plans
- embed information security across the service value system.

Processes

Information security planning and implementation:
Analyse organization's strategy and context → Define and agree the information security policies → Conduct information security risk assessment → Define and agree information security controls and plans → Communicate the information security policies and implement the information security controls and plans across the organization.

Information security controls tests and exercises:
Plan tests and exercises → Prepare tests and exercises → Perform tests and exercises → Review tests and exercises.

Information security incident management:
Detect and assign → Triage and analyse → Contain and recover.

Information security assessment and review:
Identify changes to business, technology, or threat environment → Identify missing controls → Assess control effectiveness → Create assessment report.

Software tools

- Security information and event management (SIEM) tools
- Workflow management and collaboration tools
- Monitoring and event management tools
- Analysis and reporting tools
- Work planning and prioritization tools
- Knowledge management tools, survey tools
- Orchestration systems

Recommendations for the practice success:

- Make information security everyone's responsibility.
- Work closely with customers and partners.
- Assess risks, tailor policies to the organization.
- Automate anomaly detection and build resilience.

Key metrics

- Percentage of products/services with documented security requirements
- Percentage of products/services with security plans
- Timely updates of security plans
- Security risks analysed and evaluated
- Security risks mitigated to acceptable levels
- Security plans tested
- Improvement actions from plan testing
- Governing body discussed security
- Value streams with defined security steps
- Practices with security in process flows/roles
- Improvement activities with security assessments

Key roles specific to the practice

- Chief information security officer
- Information security manager

Key terms

Confidentiality: the prevention of information being disclosed to unauthorized entities.

Availability: a characteristic of information that ensures it can be used when needed.

Integrity: an assurance that information is accurate and can only be modified by authorized personnel.

Authentication: verification that a characteristic or attribute which appears or is claimed to be true, is in fact true.

Non-repudiation: providing undeniable proof that an alleged event happened, or an alleged action was performed.

Threat: potential event that could have a negative impact on an asset.

Threat actor: any person or organization that poses a threat.

Vulnerability: any weakness in an asset or control that could be exploited by a threat.

Infrastructure and platform management

Purpose: oversee the infrastructure and platforms used by an organization.

To fulfil the purpose we need to:

- establish an infrastructure and platform management approach
- ensure that the infrastructure and platform solutions meet the organization's needs.

Processes

Management of the organization's approach to infrastructure and platform management:
Analyse organization's strategy, resources, and portfolios → Develop and agree infrastructure and platform management approach → Develop and agree on infrastructure and platform management guidelines for different types of products → Communicate infrastructure and platform management approach and guidelines to key stakeholder groups → Review and adjust the infrastructure and platform management approach and guidelines.

Infrastructure solutions development and implementation:
Review and prioritize software development tasks → Design the infrastructure solution → Source/develop/configure the components → Source/build/configure the infrastructure solution → Support implementation of infrastructure solution → Review infrastructure solution development and implementation.

Infrastructure maintenance:
Perform maintenance tasks.

IT systems review and improvement:
IT system review → IT system improvement planning → IT systems improvement initiation and control.

Software tools

- Analysis and reporting tools, CMS tools
- Collaboration and communication tools
- Enterprise architecture management tools
- External professional content libraries
- Knowledge and document management tools
- Learning Management System (LMS)
- CI/CD tools
- Monitoring and event management tools
- Orchestration and integration platforms
- Remote administration tools
- Solution design and development tools
- Workflow and task management tools

Recommendations for the practice success:

- Apply service management principle.
- Leverage automation.
- Simplify for customer experience.
- Get the funding right.

Key metrics

- Satisfaction with infrastructure/platform management
- Alignment with strategy and architecture
- Deviations from strategy/architecture roadmap
- Benefits, costs, and risks of management approach
- Stakeholder satisfaction with solutions
- Infrastructure incident
- Constraints from infrastructure/platform solutions
- Deviations from agreed management approach

Key roles specific to the practice

- Infrastructure specialist

Key terms

IT infrastructure: all the hardware, software, networks, and facilities that are required to develop, test, deliver, monitor, manage, and support IT services.

Reliability: the ability of a product, service, or other CI to perform its intended function for a specified time period or number of cycles.

Maintainability: the ease with which a service or other entity can be repaired or modified.

Observability: organization's ability to understand the internal state of an IT system, service, or product, based on the data it generates.

IT asset management

Purpose: to plan and manage the full lifecycle of all IT assets.

To fulfil the purpose we need to:

- ensure that the organization has relevant information about its IT assets throughout their lifecycle
- ensure that the utilization of IT assets is continually monitored and optimized.

Processes

Managing a common approach to ITAM:
Analyse stakeholders' requirements and IT asset risks → Define and agree the ITAM approach → Communicate and integrate ITAM approach into the organization's value streams → Review and adjust the ITAM approach and procedures.

Managing the IT asset lifecycle and records:
Analyse resources and identify IT assets → Verify IT assets and lifecycle model → Follow the lifecycle model → Manage exceptions → Review the lifecycle.

Verifying, auditing, and analysing IT assets:
Plan audit → Collect IT asset data → Verify IT asset data → Review and analyse verification and audit findings → Compose and communicate verification and audit reports.

Software tools

- Procurement systems
- Accounting systems
- Geolocation and geofencing systems
- Inventory and discovery tools
- Labelling, barcode, QR code reader systems
- Workflow management and collaboration tools
- Work planning and prioritization tools
- Analysis and reporting tools

Recommendations for the practice success:

- Focus on stakeholder value.
- Create an IT asset register and regularly update it.
- Implement traceability.
- Establish governance.
- Train and equip staff.
- Integrate ITAM with other practices.

Key metrics

- Satisfaction with IT asset information
- Audit findings and non-compliances
- Unmet IT asset info requirements
- ITAM coverage vs. planned
- IT asset financial performance (ROI, VOI, TCO)
- Effect of utilization improvements implemented
- IT assets with monitored utilization

Key roles specific to the practice

- IT asset manager
- IT asset custodian
- IT asset analyst
- IT asset register administrator
- IT asset owner
- IT asset consumer
- License manager

Key terms

IT Asset: any financially valuable component, resource, or capability that could contribute to the delivery of an IT product or service.

IT asset register: a collection of information about IT assets that includes their ownership, cost, and other key characteristics.

IT asset lifecycle: the various stages in the life of an IT asset, from planning to disposal.

IT asset decommissioning: the act of retrieving/recovering IT assets from a consumer.

IT asset disposal: the act of permanently removing an IT asset that is no longer in use

Verification: an activity that ensures a new or changed IT service, process, plan, or other deliverable is complete, accurate, reliable, and matches its design specifications.

Inventory (verb): data collection and clean up, performed as manual tasks to build or verify the contents of the IT asset register.

Discovery: data collection and clean up, achieved through automation technology and tools, to build or verify the contents of the IT asset register.

Knowledge management

Purpose: maintain and improve the effective, efficient, and convenient use of information and knowledge across the organization.

To fulfil the purpose we need to:

- create and maintain valuable knowledge and transferring and using it across an organization
- effectively using information to enable decision-making across an organization.

Processes

Establishing and maintaining the knowledge management environment:
Identify knowledge management domains and key stakeholder → Analyse organization's knowledge management requirements and capabilities → Develop knowledge management approach and guidelines → Communicate and embed knowledge management approach and guidelines across the organization → Review knowledge management application across the organization.

Knowledge routines management:
Identify and analyse knowledge demand → Identify and review knowledge routines and assets → Develop and implement knowledge routines → Fulfil knowledge routines → Review knowledge routines and assets.

Software tools

- Analysis and reporting tools
- Collaboration and communication tools
- Enterprise architecture management tools
- Knowledge and document management tools
- Learning Management System (LMS)
- Orchestration and integration platforms
- Social media tools
- Workflow and task management tools

Recommendations for the practice success:

- Identify and prioritize knowledge needs.
- Promote knowledge sharing culture.
- Develop a holistic knowledge management approach.
- Support all knowledge types and exchanges.
- Manage knowledge assets effectively.
- Embed knowledge management in value streams.
- Promote continual learning and development.
- Utilize technology and tools.
- Measure and evaluate success.

Key metrics

- Knowledge culture compliance
- Stakeholder satisfaction with knowledge management culture
- Organization-wide knowledge practice adoption
- Stakeholder satisfaction with informational support
- Information compliance (audit results)
- Information quality (accuracy, completeness, and so on)
- Knowledge tool adoption and effectiveness
- User satisfaction with knowledge tools

Key roles specific to the practice

- Knowledge manager

Key terms

Absorptive capacity: an organization's ability to recognize the value of new information, to embed it into an existing knowledge system, to apply it to the achievement of business outcomes, and to eliminate obsolete or irrelevant information.

Knowledge asset: an information resource that is important for that organization's operations and value co-creation.

Measurement and reporting

Purpose: to support good decision-making and continual improvement by decreasing the levels of uncertainty.

To fulfil the purpose we need to:

- ensure that measurements are driven by objectives
- ensure the quality and availability of measurement data
- ensure effective reporting to support decision-making.

Processes

Designing the measurement and reporting system:
Develop metrics and measurement methods → Form KPI scorecards → Design report templates and reporting policy.

Reporting and evaluating:
Data gathering and processing → Data analysis and reporting → Report evaluation and decision making.

Software tools

- Analysis and reporting tools
- Collaboration and communication tools
- Knowledge and document management tools
- Orchestration and integration platforms
- Workflow and task management tools

Recommendations for the practice success:

- Link metrics to actions and improvements.
- Use metrics to drive key questions.
- Visualize and communicate.
- Align metrics with organizational goals.
- Ensure reports support decision-making.
- Consider technical limits in metric design.
- Understand behavioural impact of metrics.
- Ensure data consistency with proper management solution.

Key metrics

- Objectives covered by measurement and reporting
- Data-to-errors ratio
- Reports without errors
- Consumer satisfaction with data quality
- Automatically generated reports
- Report timeliness
- Stakeholder satisfaction with reports

Key roles specific to the practice

- No specific role

Key terms

Measurement: a means of decreasing uncertainty based on one or more observations that are expressed in quantifiable units.

Metric: a measurement or calculation that is monitored or reported for management and improvement.

Performance: a measure of what is achieved or delivered by a system, person, team, practice, service, or other management object.

Key Performance Indicator (KPI): an important metric used to evaluate the success in meeting an objective.

Monitoring and event management

Purpose: to support the normal operation of service components by observing, analysing, and appropriately responding to changes of state in those components.

To fulfil the purpose we need to:

- establish and maintain event models and monitoring needs
- provide timely, relevant monitoring data to stakeholders
- detect, interpret, and respond to events promptly.

Processes

Monitoring planning:
Define the objective of monitoring → Define what needs to be and can be monitored → Define types of events for the object of monitoring → Define the thresholds for different types of events → Define a service 'health model' (end-to-end events) → Define events correlations and rule sets → Define the monitoring action plans → Define the required capabilities of monitoring and event management tools.

Event handling:
Detect event → Log event → Filter and correlate event → Classify event → Select event response → Notifications sent; response carried out.

Monitoring and event management review:
Major events review → Review of filtering and correlation analysis → Review of service health models → Review of event response procedures and automation → Review of monitoring and event tools → Review of statistical information.

Software tools

- Workflow management and collaboration tools
- Knowledge management, CMDB tools
- Analysis and reporting tools
- Monitoring and event management tools, including native (built-in) and add-on tools for monitoring

Recommendations for the practice success:

- Develop the strategy with proper tools and processes and regularly review it.
- Understand component purposes and stakeholder needs.
- Adjust monitoring based on event context and significance.
- Avoid monitoring events of unknown significance unnecessarily.
- Review monitoring report usage and effectiveness regularly.
- Collaborate post-incident to improve prevention through monitoring.
- Use automation to assess event significance and respond appropriately.

Key metrics

- Satisfaction with practice approach
- Organizational adherence to the approach
- Percentage of recommendations/requirements unmet or unrealistic
- Satisfaction with monitoring data and presentation
- Monitoring data quality
- Impact of event management errors
- Number and impact of event communication noise
- Incidents/problems from poor event management

Key roles specific to the practice

- No specific role

Key terms

Event: any change of state that has significance for the management of a service or other configuration item (CI).

Monitoring: repeated observation of a system, practice, process, service, or other entity to detect events and to ensure that the current status is known.

Threshold: the value of a metric that triggers a pre-defined response.

Alert: a notification that an action needs to be taken, a threshold has been reached, something has changed, or a failure has occurred.

Organizational change management

Purpose: to ensure that changes in an organization are implemented smoothly and successfully, and that lasting benefits are achieved by managing the human aspects of the changes.

To fulfil the purpose we need to:

- create and maintain a change-enabling culture
- establish and maintain a holistic approach to Organizational Change Management (OCM)
- ensure organizational changes are realized in an effective manner, leading to stakeholders' satisfaction and meeting compliance requirements.

Processes

Management of the OCM approach:
Analyse the organizational change management requirements and capabilities → Develop an OCM approach and guidelines → Communicate and embed OCM approach and guidelines across the organization → Review the OCM performance across the organization.

Organizational changes lifecycle management:
Assess organizational change request → Plan organizational change → Communicate the organizational change → Control realization of the organizational change → Sustain organizational change > Review organizational change.

Software tools

- Analysis and reporting tools
- Collaboration and communication tools
- Enterprise architecture management tools
- Knowledge and document management tools
- Learning Management System (LMS)
- Social media
- Workflow and task management tools

Recommendations for the practice success:

- Adopt a common approach to OCM.
- Define clear and relevant objectives.
- Ensure strong and committed leadership.
- Engage willing and prepared participants.
- Demonstrate progress.
- Ensure sustainable improvement.
- Leverage existing good practices and automation.
- Continually improve OCM.

Key metrics

- Awareness of change principles and methods
- Organizational attitude toward change
- Level of change resistance
- Alignment of change attitudes across levels
- Satisfaction with procedures and communication
- Improvements initiated by OCM practice
- Satisfaction with knowledge of transformation tools/methods
- Change initiators' satisfaction with outcomes
- Change success/acceptance rate
- Compliance with formal change requirements (audits)
- Change timeliness satisfaction
- Satisfaction with change realization

Key roles specific to the practice

- Organizational change leader role
- Change team member role

Key terms

Organizational change: a modification in a major organizational component, such as culture, structure, or processes.

Portfolio management

Purpose: to ensure that the organization has the right mix of programmes, projects, products, and services to execute the organization's strategy within its funding and resource constraints.

To fulfil the purpose we need to:

- ensure sound investment decisions for programmes, projects, products, and services within the organization's resource constraints
- ensure the continual monitoring, review, and optimization of the organization's portfolios.

Processes

Managing the organization's approach to portfolios:
Analyse the organization's strategy and resources → Develop and agree the portfolio management approach → Develop and agree the portfolio management guidelines for different portfolio groups and categories → Communicate the portfolio management approach and guidelines to key stakeholder groups → Review and adjust the portfolio management approach and guidelines.

Managing the portfolio lifecycles:
Portfolio planning → Portfolio monitoring → Portfolio review.

Software tools

- Analysis and reporting tools
- Collaboration and communication tools
- Enterprise architecture management tools
- Financial management systems
- Knowledge and document management tools
- Workflow and task management tools

Recommendations for the practice success:

- Agree the highest level of portfolio management in the organization.
- Align the portfolios to strategic objectives and ensure clear definitions of value.
- Make portfolio expectations clear and track progress at all relevant levels.
- Define a clear and easy-to-follow process for portfolio item acceptance.

Key metrics

- ROI: planned vs. actual
- Stakeholder satisfaction with portfolios
- Strategic decisions supported by portfolios
- Portfolio review schedule adherence
- Dynamics of portfolio effectiveness
- Satisfaction with portfolio communications
- Incorrect portfolio decisions

Key roles specific to the practice

- Portfolio manager
- Portfolio owner
- Portfolio coordinator

Key terms

Portfolio: a collection of assets into which an organization chooses to invest its resources in order to achieve the best return.

Problem management

Purpose: to reduce the likelihood and impact of incidents by identifying actual and potential causes of incidents and managing workarounds and known errors.

To fulfil the purpose we need to:

- identify and understand the problems and their impact on services
- optimize problem resolution and mitigation.

Processes

Proactive problem identification:
Review of the submitted information→ Problem registration → Initial problem categorization and assignment.

Reactive problem identification:
Problem registration → Initial problem categorization and assignment.

Problem control:
Problem investigation → Known error communication.

Error control:
Problem solution development → Problem resolution initiation → Known error monitoring and review → Problem closure.

Software tools

- Monitoring and event management tools
- Workflow management and collaboration tools
- Knowledge management, CMDB tools
- Analysis and reporting tools

Recommendations for the practice success:

- Start logging problems immediately and ensure that the right people are in the right roles.
- The problem manager or problem team won't fix all the problems alone, practice needs swarming approach.
- Prioritize problems in order of value to the organization, publish a list of top business problems.
- SLAs don't apply to problems, but problem management improves service quality.
- Get user/customer input on their problems.
- Use AI and automation tools where possible.

Key metrics

- Incidents without known error
- Problem identified
- Incidents require urgent problem investigation
- Incidents prevented by problem resolution
- Incidents resolved by problem investigation
- Open known error

Key roles specific to the practice

- Problem manager
- Problem coordinator

Key terms

Problem: a cause, or potential cause, of one or more incidents.

Workaround: a solution that reduces or eliminates the impact of an incident or problem for which a full resolution is not yet available.

Known error: a problem that has been analysed but has not been resolved.

Technical debt: the total rework backlog accumulated by choosing workarounds instead of systemic solutions that would take longer.

Problem model: a repeatable approach to the management of a particular type of problem.

Project management

Purpose: to ensure that all projects in the organization are successfully delivered.

To fulfil the purpose we need to:

- establish and maintain an effective approach to programme and project management across the organization
- ensure the successful realization of programmes and projects.

Processes

Managing the organization's approach to PPM:
Develop and agree the PPM approach → Communicate and embed the PPM approach → Review and adjust the PPM approach.

Directing projects:
Authorize initiation → Authorize the project → Authorize a stage or exception plan → Give ad hoc direction → Authorize project closure.

Managing projects:
Starting up a project → Initiating a project → Controlling a stage → Managing a stage boundary → Closing a project.

Managing product delivery:
Accept a work package → Execute a work package → Deliver a work package.

Software tools

- Workflow and task management tools
- Knowledge and document management tools
- Financial management system
- Collaboration and communication tools
- Analysis and reporting tools

Recommendations for the practice success:

- Clearly define the expected outcomes and the required outputs.
- Ensure projects and programmes are clearly linked to portfolio objectives.
- Define successes and accountability at the right level.
- Identify and satisfy reporting needs.
- Use project management for projects only.

Key metrics

- Satisfaction with PPM approach
- Satisfaction with project/programme benefits
- Deviation count and impact from agreed approach
- Failures due to ineffective PPM approach
- PPM alignment with industry standards
- Projects completed on time and budget (%)
- Benefits realized from projects/programmes (%)
- Satisfaction with project/programme management and progress

Key roles specific to the practice

- Programme manager
- Project executive
- Project manager
- Project support
- Team manager
- Senior user

Key terms

Programme: a temporary, flexible structure created to coordinate, direct, and oversee the implementation of a set of related projects and activities in order to deliver outcomes and benefits related to the organization's strategic objectives.

Project: a temporary organization that is created for the purpose of delivering one or more business products according to an agreed business case.

Benefit: a measurable improvement resulting from an outcome perceived as an advantage by one or more stakeholders.

Relationship management

Purpose: to establish and nurture the links between the organization and its stakeholders at strategic and tactical levels.

To fulfil the purpose we need to:

- establish and continually improve an effective approach to the relationship management practice across the organization
- ensure effective and healthy relationships within the organization
- ensure effective and healthy relationships between the organization and its external stakeholders.

Processes

Managing a common approach to relationships:
Analyse the organization's culture, strategy, and stakeholders → Develop and agree key principles of relationships → Develop and agree relationship models for key stakeholder groups → Embed effective behaviour patterns into daily work interactions → Review and adjust the relationship's approach and models.

Managing relationship journeys:
Identify stakeholders and relationship model→ Verify and adjust relationship model to the situation → Follow the relationship model → Manage exceptions → Review the relationship.

Software tools

- Workflow management and collaboration tools
- Knowledge management tools
- Analysis and reporting tools
- CRM tools
- Survey tools

Recommendations for the practice success:

- Apply a consistent relationship approach.
- Review approach regularly.
- Measure stakeholder satisfaction.
- Integrate practice with value streams.
- Develop practice without overcomplicating.
- Demonstrate value & involve third parties.

Key metrics

- Adoption of relationship management approach
- Satisfaction with relationship management
- Broken relationships due to non-adoption
- Organizational climate
- Employee satisfaction with workplace relationships
- Attrition due to toxic relationships
- Organization's external image
- Satisfaction with external relationships
- Broken external relationships due to RM approach

Key roles specific to the practice

- Relationship manager
- Relationship agent

Key terms

Cooperation: working with others to achieve your own goals.

Collaboration: working with others to achieve common shared goals.

Relationship model: a repeatable approach to the management of relationships with a particular type of stakeholder.

Release management

Purpose: to make new and changed services and features available for use.

To fulfil the purpose we need to:

- establish and maintain effective approaches to the release of services and service components across the organization
- ensure an effective release of services and service components in the context of the organization's value streams and service relationships.

Processes

Release model development and improvement:
Product architecture and service relationship analysis → Release management approach review and development → Release model review and development → Release model communication.

Release planning and coordination:
Identification of applicable model → Release instance planning → Verification of the service components → Verification of the release procedures → Release execution → Release verification → Release review.

Software tools

- Workflow management and collaboration tools
- Enterprise architecture tools
- Monitoring and event management tools
- Work planning and prioritization tools
- Analysis and reporting tools
- CI/CD toolchain
- Deployment management and CMDB tool

Recommendations for the practice success:

- Design and optimize the practice for the value streams.
- Ensure the best user experience possible.
- Review the effectiveness of release models.
- Start with the most important products and services, don't overcomplicate.
- Integrate release management in the CI/CD pipeline.
- Demonstrate business value.

Key metrics

- Satisfaction with service introduction
- Adoption of release management approach
- Partner and consumer alignment with release models
- Audit/compliance issues
- Satisfaction with releases
- Successful release rate/errors
- Incidents related to releases (%)
- Adherence to release schedule
- Release backlog throughput

Key roles specific to the practice

- Release Manager

Key terms

Release: a version of a service or any other configuration item, or a collection of configuration items, that is made available for use.

Release model: a repeatable approach to the management of particular types of releases.

Risk management

Purpose: to ensure that the organization understands and effectively handles risks.

To fulfil the purpose we need to:

- establish governance of risk management
- nurture a risk management culture and identifying risks
- analyse and evaluate risks
- treat, monitor, and review risks.

Processes

Governance of risk management:
Monitor the organization and the environment → Evaluate the organization and the environment → Document risk capacity and risk appetite → Document risk management policy and framework → Provide direction to management.

Risk identification, analysis, and treatment:
Risk identification → Risk analysis and evaluation → Risk treatment.

Risk monitoring and review:
Control assessments and evaluation → Risk audits.

Software tools

- Analysis and reporting tools
- Automated testing tools
- Business process modelling tools
- Collaboration and communication tools
- Enterprise architecture management tools
- Knowledge and document management tools
- Learning management system (LMS)
- Monitoring and event management tools
- Risk management tools
- Service catalogue tools
- Service configuration management tools
- Web portals and social media
- Workflow and task management tools

Recommendations for the practice success:

- Understand and communicate the risk appetite.
- Reward risk identification.
- Consider risks from all four dimensions.
- Manage strategic, tactical, and operational risks.
- Automate risk treatment where practical.
- Integrate risk management into the organization's value streams.

Key metrics

- Time since last risk appetite/capacity review
- Strategic risks fully documented
- Employees feeling safe to report risks (survey)
- Risks reported by non-risk roles
- Risks with documented likelihood, impact & owner in risk register
- Risks with treatment plan and next action date
- Risks reviewed in last six months
- Controls reviewed and audited in last six months

Key roles specific to the practice

- Risk manager
- Risk owner

Key terms

Risk: a possible event that could cause harm or loss, or make it more difficult to achieve objectives.

Control: the means of managing a risk, ensuring that a business objective is achieved, or that a process is followed.

Service catalogue management

Purpose: to provide a single source of consistent information on all services and service offerings, and to ensure that it is available to the relevant audience.

To fulfil the purpose we need to:

- ensure organization's service catalogue structure and scope meet organizational requirements
- ensure the information in service catalogues meets stakeholders' current and anticipated needs.

Processes

Defining and maintaining service catalogue data and standard service catalogue views:
Analyse stakeholders' requirements for the service catalogue → Define service catalogue data structure → Define and agree service catalogue standard views for key stakeholder groups → Communicate and implement service catalogue standard views → Collect and maintain service catalogue data → Review service catalogue performance.

Providing and maintaining up-to-date service catalogue views:
Process a request for a service catalogue view → Validate service catalogue request → Form and present the requested view → Request and process user feedback.

Software tools

- Workflow and task management tools
- Enterprise architecture management tools
- Financial Management System (FMS)
- Knowledge and document management tools
- Orchestration and integration platforms
- Service catalogue tools
- CMS tools
- Social media
- CRM tools
- Analysis and reporting tools
- Collaboration and communication tools
- Supplier management tools

Recommendations for the practice success:

- Design catalogue for the stakeholders.
- Integrate service catalogues from different providers.
- Manage service request catalogue as a view of service catalogue.
- Use automation and optimize service catalogue presentation.
- Start with service catalogues for customers and with existing service.
- Regularly review design of catalogue and tailored views.

Key metrics

- Completeness of service catalogue (missing services)
- Fulfilment of catalogue design requirements
- Missing/ineffective/manual integrations with info sources
- Stakeholder satisfaction with catalogue content
- Catalogue errors (incorrect/missing/outdated info)
- Stakeholder satisfaction with catalogue interface
- Progress on content/interface improvements
- Progress on design improvements

Key roles specific to the practice

- Service catalogue manager

Key terms

Resources: personnel, material, finance, or other entity that is required for the execution of an activity or the achievement of an objective.

Product: a configuration of an organization's resources designed to offer value for a consumer.

Service: a means of enabling value co-creation by facilitating outcomes that customers want to achieve, without the customer having to manage specific costs and risks.

Service offering: a formal description of one or more services, designed to address the needs of a target consumer group.

Service catalogue: structured information about all the services and service offerings of a service provider, relevant for a specific target audience.

Request catalogue: a view of the service catalogue, providing details on service requests for existing and new services, which is made available for the user.

Service configuration management

Purpose: to ensure that accurate and reliable information about the configuration of services, and the configuration items that support them, is available when and where it is needed.

To fulfil the purpose we need to:

- ensure the organization has relevant configuration information about its products and services
- ensure the costs of providing configuration information are continually optimized.

Processes

Managing a common approach to service configuration management:
Analyse stakeholder requirements → Define and agree the service configuration management approach → Communicate and integrate the service configuration management approach into the organization's value streams → Review and adjust the service configuration management approach and procedures.

Capturing, managing, and providing configuration information:
Analyse resources and identify CIs → Confirm a CI lifecycle model → Follow the CI lifecycle model → Manage exceptions → Review the CI lifecycle model.

Verifying configuration data:
Plan the verification activities → Identify a CI lifecycle model → Verify configuration data → Review the verification output → Define and implement corrective actions → Compose and communicate a CMDB verification report.

Software tools

- Workflow management and collaboration tools
- Analysis and reporting tools
- Work planning and prioritization tools
- Knowledge management tools
- CMS tools
- Inventory and discovery tools
- Classification and analysis tools

Recommendations for the practice success:

- Design configuration management to meet stakeholder needs.
- Regularly review CMDB scope and detail level.
- Ensure continuous CMDB verification.
- Involve third parties.
- Automate config data handling where feasible.
- Develop practice continually without overcomplicating.
- Demonstrate value.

Key metrics

- Satisfaction with configuration information
- Satisfaction with config management interfaces/processes
- Decisions impacted by poor config info
- Incorrect CMDB data
- Verified CMDB data
- Cost of service configuration management
- CMDB data usage rate

Key roles specific to the practice

- Configuration manager and coordinator
- Configuration librarian
- Resource owner

Key terms

Configuration item: any component that needs to be managed in order to deliver an IT service.

Configuration management system (CMS): a set of tools, data, and information that is used to support the service configuration management practice.

Configuration management database (CMDB): a database used to store configuration records throughout their lifecycle.

Baseline configuration: a configuration of a product, service, or other configuration item, that has been formally reviewed and agreed.

Verification: an activity that ensures that a new or changed IT service, process, plan, or other deliverable matches its design specification and is complete, accurate, and reliable.

Inventory: data collection and clean up, performed as manual tasks, to build or verify the contents of the CI register.

Discovery: data collection and clean up, achieved through automation technology and tools, to build or verify the contents of the CMDB.

Service continuity management

Purpose: to ensure that the availability and performance of a service are maintained at sufficient levels in case of a disaster.

To fulfil the purpose we need to:

- develop and manage service continuity plans
- mitigate service continuity risks
- ensure awareness and readiness.

Processes

Business impact analysis:
VBF identification → Analyse the consequences of disruption → VBF interdependencies identification → Determination of the service continuity requirements.

Developing, exercising, and maintaining service continuity plans:
Scope definition → Policy setting → Service continuity strategies development → Service continuity plans development → Awareness and exercise programme development → Performing exercises → Service continuity audit.

Response and recovery:
Invocation → Executing service continuity plans.

Software tools

- Workflow and task management tools
- Service configuration management
- Risk management tools
- Remote administration, diagnosis, deployment tools
- Orchestration and integration platforms
- Monitoring and event management tools
- Service catalogue tools
- Knowledge and document management tools
- Emergency management tools
- Business Process Modelling (BPM) tools
- Business continuity planning tools
- Collaboration and communication tools
- Analysis and reporting tools

Recommendations for the practice success:

- Understand consumer expectations.
- Know legal and regulatory continuity requirements.
- Avoid creating all continuity plans at once.
- Keep plans simple and clear.
- Regularly test and practice continuity plans.
- Automate response and recovery.
- Collaborate with suppliers.
- Embed continuity management in value streams.

Key metrics

- Products/services with documented continuity requirements and plans
- Timely updates to continuity plans
- RTO achievement
- RPO achievement
- Effective continuity measure
- Actual vs. expected loss ratio
- Continuity awareness and readiness sessions
- Continuity plans tested

Key roles specific to the practice

- Service continuity manager

Key terms

Disaster: a sudden unplanned event that causes great damage or serious loss to an organization.

Service continuity: the capability of the service provider to continue service operation at acceptable predefined levels following a disaster event or disruptive incident.

Business impact analysis: a key activity in the practice of service continuity management that identifies Vital Business Functions (VBFs) and their dependencies.

Vital business function: a capability or function of a business process that is required to ensure the success of the business.

Service continuity plans: a set of clearly defined plans describing how an organization will recover from a disaster and return to a pre-disaster condition, considering the four dimensions of service management.

Service design

Purpose: to design products and services that are fit for purpose and use, and that can be delivered by the organization and its ecosystem.

To fulfil the purpose we need to:

- establish and maintain an effective organization-wide approach to service design
- ensure that services are fit for purpose and fit for use throughout their lifecycle.

Processes

Management of the organization's approach to service design:
Analyse organization's strategy, resources, and portfolios → Develop and agree service design approach → Develop and agree service design models and guidelines for different types of products → Communicate service design approach and guidelines to key stakeholder groups → Review and adjust the service design approach and guidelines.

Service design planning and coordination:
Analyse design request, identify applicable design model → Plan design activities and resources → Execute the design plan → Manage exceptions → Review service design.

Software tools

- Analysis and reporting tools
- Collaboration and communication tools
- Enterprise architecture management tools
- Knowledge and document management tools
- Learning Management System (LMS)
- CMS tools
- Solution design and development tools
- Workflow and task management tools

Recommendations for the practice success:

- Ask, don't guess.
- Work closely with the customer.
- Strengthen the current offerings.
- Experiment and learn.
- Leverage data for decision-making and AI.
- Enable others to excel.
- Don't ignore sustainability.

Key metrics

- Adherence to service design approaches
- Fit for purpose across the portfolio
- Satisfaction with innovation through design
- Products/services meeting utility and warranty
- Satisfaction with service design models and methods
- Satisfaction with product/service design capabilities
- Satisfaction with financial efficiency of service design

Key roles specific to the practice

- Service designer
- Service design lead
- User experience designer

Key terms

User-Centered Design (UCD): an approach to designing products, services, or experiences that puts the user at the heart of the process.

User persona: user personas are archetypical representations of key user segments, synthesized from data collected through user research.

Customer Experience (CX): the sum of functional and emotional interactions with a service and service provider as perceived by a customer.

User Experience (UX): the sum of functional and emotional interactions with a service and service provider as perceived by a user.

Service Design Package (SDP): service design document(s) defining all aspects of an IT service and its requirements through each stage of its lifecycle.

Service desk

Purpose: to capture demand for incident resolution and service requests.

To fulfil the purpose we need to:

- enable and continually improve effective, efficient, and convenient communications between the service provider and its users
- enable the effective integration of user communications into value streams.

Processes

User query handling:
Acknowledge and record the user query → Validate the user query → Triage the user query and initiate the appropriate activities.

Communicating to users:
Identify and confirm the target audience → Identify and confirm communication channels→ Package information → Send information → Gather and process receipt confirmations and feedback.

Service desk optimization:
Service desk review → Service desk improvement initiation → Service desk improvement communication.

Software tools

- Workflow management and collaboration tools
- User query management tools
- Work planning and prioritization tools
- Analysis and reporting tools
- Survey tools

Recommendations for the practice success:

- Establish a clear communication channel.
- Understand the users' business.
- Implement new channels and tools gradually.
- Automate repeating and standardized operations.
- Define service desk objectives aligned with value streams and consumer business goals.

Key metrics

- Quality of service desk information
- Convenience of service desk channels
- Satisfaction with service desk info and channels
- Service desk info quality with respect to value stream needs
- Incorrect query triage

Key roles specific to the practice

- Service desk manager
- Service desk agent

Key terms

Omnichannel communications: unified communications across multiple channels based on sharing information across the channels and providing a seamless communication experience.

Service empathy: the ability to recognize, understand, predict, and project the interests, needs, intentions, and experiences of another party in order to establish, maintain, and improve the service relationship.

Moment of truth: any episode in which the customer or user encounters an aspect of the organization and gets an impression of the quality of its service.

Service level management

Purpose: to set clear business-based targets for service utility, warranty, and experience, and to ensure that service delivery and use is properly assessed, monitored, and managed against their targets.

To fulfil the purpose we need to:

- establish a shared view of target service levels with customers
- oversee how the organization meets the defined service levels through the collection, analysis, storage, and reporting of the relevant metrics for the identified services
- perform service reviews to ensure that the current set of services continues to meet the needs of the organization and its customers
- capture and report service improvement opportunities, including performance against defined service levels and stakeholder satisfaction.

Processes

Management of SLAs:
Definition of customer requirements→ Viability analysis → Drafting an SLA → SLA negotiation → SLA communication and enablement → SLA Review → SLA Prolongation → SLA withdrawal.

Oversight of service levels and service quality:
Customer and user satisfaction surveys → Ongoing service quality monitoring → Service review → Service quality reporting.

Software tools

- Workflow management and collaboration tools
- Knowledge management
- CMDB tools
- Service catalogue tools
- Monitoring and event management tools
- Social media
- Survey tools
- Built-in service usage monitoring and analysis tools
- Analysis and reporting tools

Recommendations for the practice success:

- Ensure clear ownership of all services.
- SLAs should include what is important for the customers.
- Continual improvement of services is more important than SLAs.
- For user-facing services, consider experience management.
- Use SLAs to improve communications with customers and within service providers.
- Report on the service quality regularly and often; consider live dashboards.

Key metrics

- Customer satisfaction with SLA content
- SLAs overdue for review
- Customer service operations without SLA
- SLAs with service level measurement approach
- Services with regular SLA reports
- Services with SLA monitoring dashboard
- Services with regularly collected satisfaction data
- Satisfaction with service reporting
- Scheduled regular service reviews
- Satisfaction with service reviews
- Average service quality
- Service improvement productivity

Key roles specific to the practice:

- Service owner
- Service level manager

Key terms

Service quality: the totality of the characteristics of a service that are relevant to its ability to satisfy stated and implied needs.

Service level: one or more metrics that define expected or achieved service quality.

Service Level Agreement (SLA): a documented agreement between a service provider and a customer that identifies both services required and the agreed level of service.

Utility: the functionality offered by a product or service to meet a particular need, summarized as 'what the service does' and can be used to determine whether a service is 'fit for purpose'.

Warranty: assurance that a product or service will meet agreed requirements, summarized as 'how the service performs' and can be used to determine whether a service is 'fit for use'.

Customer/user experience: the sum of functional and emotional interactions with a service and service provider as perceived by the customer and/or user of that service.

Service request management

Purpose: to support the agreed quality of a service by handling all predefined, user-initiated service requests in an effective and user-friendly manner.

To fulfil the purpose we need to:

- ensure the service request fulfilment procedures for all services are optimized
- ensure all service requests are fulfilled according to the agreed procedures and to user satisfaction.

Processes

Service request fulfilment control:
Request categorization → Service request model initiation and control → Ad hoc fulfilment control → Fulfilment review.

Service request review and optimization:
Service request records and reports analysis → Service request model improvement initiation → Service request model update communication.

Software tools

- Workflow management and collaboration tools
- Monitoring and event management tools
- Publishing tools
- Social media
- Analysis and reporting tools
- Work planning and prioritization tools

Recommendations for the practice success:

- Focus on value for users and service value streams.
- Ensure clear and user-friendly interfaces and procedures.
- Consider monitoring and event management for maintenance-focused events.
- Start with the most popular service requests.
- Include feedback capturing in all service request models.

Key metrics

- Service request catalogue completeness; unsupported requests
- Requests unfulfilled due to procedural errors/ inefficiencies
- Fulfilment team satisfaction with provided instructions
- Average request fulfilment time and cost (by type/model)
- Automated request fulfilment (% of catalogue, total, and time impact)
- Requests fulfilled within SLA
- Incident impact from incorrect request fulfilment
- User satisfaction with request fulfilment
- Requests fulfilled with procedural deviations

Key roles specific to the practice

- Request initiator

Key terms

Service request: a request from a user or a user's authorized representative that initiates a service action which has been agreed as a normal part of service delivery.

Service request model: a repeatable predefined approach to the fulfilment of a particular type of service requests.

Request catalogue: a view of the service catalogue, providing details on service requests for existing and new services, which is made available to the user.

Service validation and testing

Purpose: to ensure that new or changed products and services meet defined requirements.

To fulfil the purpose we need to:

- define and agree an approach to the validation and testing of the organization's products, services, and components in line with the organization's requirements for speed and quality of service changes
- ensure that new and changed components, products, and services meet agreed criteria.

Processes

- **Management of the organization's approach to service validation and testing:**
  Analyse organization's strategy, resources, and portfolios → Develop and agree service validation and testing approach → Develop and agree service validation and testing models and guidelines for different types of products→ Communicate service validation and testing approach and guidelines to key stakeholder groups → Review and adjust the service validation and testing approach and guidelines.
- **Service validation:**
  Agree and document acceptance criteria → Verify acceptance criteria.
- **Tests planning and execution:**
  Analyse testing request, identify applicable testing model → Plan tests → Execute the testing plan → Manage exceptions → Review the testing.

Software tools

- Workflow and task management tools
- Analysis and reporting tools
- Automated testing tools
- Collaboration and communication tools
- Enterprise architecture management tools
- Knowledge and document management tools
- Learning Management System (LMS)
- CMDB tools
- Solution design and development tools

Recommendations for the practice success:

- Prioritize risk-based testing.
- Data-driven testing, shift left testing.
- Invest in testable design, automation.
- Continually improve testing scope and approach.
- Integrate validation and testing in the product and service lifecycle.
- Don't try to test everything and collaborate.

Key metrics

- Adherence to validation and testing approaches
- Satisfaction with testing approaches
- Satisfaction with product/service quality
- Customer satisfaction with requirement compliance
- Products/services meeting utility and warranty requirements (%)
- Satisfaction with validation/testing models and methods
- Satisfaction with testing capabilities
- Losses from issues missed during testing

Key roles specific to the practice

- Tester
- Test manager
- Quality specialist

Key terms

Service validation: confirming that the proposed service design meets agreed service requirements and on establishing acceptance criteria for the next stages (development, deployment, and release).

Software and development management

Purpose: to ensure that software products meet internal and external stakeholder needs, in terms of functionality, reliability, maintainability, operability, compliance, and auditability.

To fulfil the purpose we need to:

- agree and improve an organization's approach to development and management of software products
- ensure that software products continually meet organization's requirements and quality criteria throughout their lifecycle.

Processes

Management of the organization's approach to software development and management:
Analyse organization's strategy, resources, and portfolios → Develop and agree software development and management approach → Develop and agree software development and management guidelines for different types of products → Communicate software development and management approach and guidelines to key stakeholder groups → Review and adjust the software development and management approach and guidelines.

Software development:
Review and prioritize software development tasks → Design software → Develop software unit → Test software unit → Integrate software units → Test software system.

Software maintenance and improvement:
Software system review → Software improvement planning → Software improvement initiation and control.

Software tools

- Analysis and reporting tools
- CMDB tools
- Collaboration and communication tools
- Enterprise architecture management tools
- External professional content libraries
- Knowledge and document management tools
- Learning Management System (LMS)
- CI/CD tools
- Monitoring and event management tools
- Orchestration and integration platforms
- Remote administration tools
- Diagnosis, deployment, and other infrastructure and software management tools
- Solution design and development tools
- Workflow and task management tools

Recommendations for the practice success:

- Clarify the expected value.
- Ensure that responsibilities are understood.
- Improve where improvement is felt.
- Always focus on the flow.
- Leverage automation opportunities.

Key metrics

- Satisfaction with development approach
- Adherence to chosen approach
- Satisfaction with rate of change enabled by the approach
- Improvement initiatives throughput
- Compliance with internal/external policies
- Satisfaction with software products
- Delivery frequency/reliability of new/changed functionality
- Development cost, technical debt
- Resource utilization
- Software availability
- Security breaches and audit-related costs

Key roles specific to the practice:

- Product owner/manager
- Scrum master/agile coach
- Delivery manager/lead
- Solution architect
- Software developer
- UX/UI designer
- Quality assurance engineer

Key terms

Software: a set of instructions that tell the physical components (hardware) of a computer how to work. Software development: The design and construction of software products according to functional and non-functional requirements.

Software development: the design and construction of software products according to functional and non-functional requirements and correction and enhancement of operational software products according to changing functional and non-functional requirements.

Software quality: capability of software product to satisfy stated and implied needs when used under specified conditions.

Technical debt: the total rework backlog accumulated by choosing workarounds instead of system solutions that would take longer.

Definition of Done: the agreed criteria for a proposed product or service, reflecting functional and non-functional requirements.

Strategy management

Purpose: to formulate the goals of the organization and adopt the courses of action and allocation of resources necessary for achieving those goals.

To fulfil the purpose we need to:

- ensure that the organization's strategies are effective and sustainable, and meet the stakeholders' evolving needs
- ensure that the agreed strategies and models are communicated across the organization and embedded into the organization's practices and value streams.

Processes

Strategy generation and continual development:
Strategic assessment → Strategy planning → Strategy discussion and approval → Strategy communication and implementation → Strategy review.

Ad hoc strategic decision-making:
Detection of a strategic exception → Situational orientation and assessment → Discuss and agree decision → Decisions communication and implementation → Review.

Software tools

- Analysis and reporting tools
- Collaboration and communication tools
- Enterprise architecture management tools
- Knowledge and document management tools
- Workflow and task management tools

Recommendations for the practice success:

- Align strategies with the needs of stakeholders.
- Manage strategies continually.
- Embrace new technology, complexity and uncertainty.
- Measure, review and report strategy effectiveness.
- Transform strategies into actionable guidelines.

Key metrics

- Stakeholder satisfaction
- Stakeholder involvement in strategy planning
- Timeliness of strategy design/renewal
- Percentage of strategic objectives achieved
- Percentage of strategic initiatives completed
- Outdated/irrelevant strategy cases
- Strategy resilience to internal/external stress events
- Awareness of strategic principles and goals
- Strategic alignment of practices, value streams, and services
- Cases of strategic objectives were not supported by practices, value streams, products, or services

Key roles specific to the practice:

- Strategic decision-makers
- Strategic management committee

Key terms

Business strategy: a high-level plan that outlines an organization's purpose and long-term goals; and specifies the ways to achieve those goals in a dynamic environment.

Digital strategy: a business strategy that is based on all or in part on using digital technology to achieve its goals and purpose.

Purpose: the reason that an organization exists, or its core business.

Vision: the defined aspiration of what an organization would like to become in the future.

Supplier management

Purpose: to ensure that the organization's suppliers and their performances are managed appropriately to support the seamless provision of quality products and services.

To fulfil the purpose we need to:

- ensure the sourcing strategy and guidelines effectively support the organization's strategy
- ensure service relationships with all suppliers and partners are managed effectively and in line with internal and external regulations
- ensure the effective integration of third-party services into the organization's products and services.

Processes

Managing a common approach to supplier management:
Develop and agree the sourcing strategy → Develop and agree the supplier management procedures→ Communicate and embed the sourcing strategy and procedures → Review and adjust the sourcing strategy and procedures.

Managing supplier journeys:
Identify available suppliers → Engage with suppliers and communicate demand → Evaluate and select suppliers → Contract suppliers → On/offboard suppliers → Manage consumption and monitor supplier performance → Assess and review suppliers.

Software tools

- Workflow management and collaboration tools
- Monitoring and event management tools
- Knowledge management tools
- Work planning and prioritization
- Analysis and reporting, survey tools
- Supplier management tools

Recommendations for the practice success:

- Be realistic when creating the sourcing strategy.
- Develop partnerships based on trust.
- Leverage supplier expertise to improve the value streams.
- Perform adequate due diligence when considering the outsourcing of core function.
- Develop the practice continually but don't overcomplicate it.
- Adjust for complexity.
- Demonstrate business value.

Key metrics

- Cases where strategic goals failed due to third-party dependencies
- Strategic goals not aligned with sourcing strategy
- Sourcing objectives not linked to organizational strategy
- Cost comparison: internal vs. third-party service
- Satisfaction with third-party relationships and integration
- Regulatory breaches (internal/external) and their impact
- Value gained from suppliers/partners (benefits, risks, costs)
- Losses/delays caused by poor third-party integration
- Incidents and SLA breaches tied to third-party involvement

Key roles specific to the practice

- Supplier manager
- Supplier coordinator

Key terms

Sourcing strategy: an organization's strategy to obtain the products and services needed to effectively and efficiently run its business.

Supplier: a stakeholder responsible for providing services that are used by an organization.

RfX: this umbrella term is used to reference to request for information (RFI), request for proposal (RFP), request for quote (RFQ), request for bid (RFB), or request for demonstration (RFD).

Request for Information (RFI): an RFI is a formal, yet typically non-binding, document or communication used to gather information about products, services, or solutions available from potential suppliers.

Request for Proposal (RFP): an RFP is a formal and comprehensive document issued by an organization seeking proposals from potential suppliers to provide products, services, or solutions to meet specific defined requirements.

Request for Quote (RFQ): an RFQ is a formal, yet concise, document used to solicit price quotes from potential suppliers for specific, often standard, products or services.

Request for Bid (RFB): an RFB is a formal and highly-detailed document used to invite competitive bids from potential suppliers to provide specific products or services.

Request for Demonstration (RFD): an RFD is a formal document used by organizations to request live presentations or hands-on demonstrations of products or services from potential suppliers.

Workforce and talent management

Purpose: to ensure that the organization has the right people, with the appropriate skills and knowledge, in the correct roles to support its business objectives.

To fulfil the purpose we need to:

- ensure the continual alignment of the workforce and talent management approach to the organization's business strategy
- ensure that motivated and competent people effectively contribute to the achievement of the organization's objectives
- ensure that the administrative processes for this practice effectively support the organization's strategy and objectives.

Processes

Organizational planning:
Strategic analysis → Service value streams analysis → Organizational design → Initiate and monitor organizational changes → Organization monitoring and review.

Employees' journey management:
Analyse workforce requirements and identify employee journey model → Verify and adjust the employee journey model → Follow the model→ Manage exceptions → Review the employee journey models.

Talent management:
Define a competency vision → Assess competency → Plan development and optimization → Steer the development programme → Manage exceptions → Review competency development programme.

Software tools

- Analysis and reporting tools
- Capacity management tools
- Collaboration and communication tools
- Contract management tools
- Enterprise architecture management tools
- Knowledge and document management tools
- Learning Management System (LMS)
- Social media
- Survey tools
- Talent management and HR tools
- Workflow and task management tools

Recommendations for the practice success:

- Share workforce management between HR and leaders.
- Prioritize employee experience and satisfaction.
- Align workforce and talent strategy with organizational goals.
- Balance quick wins with long-term focus.
- Use technology wisely, keep human touch.
- Simplify employee journeys.

Key metrics

- Strategic initiatives not supported by workforce practices
- Strategic objectives supported by workforce and talent approach
- Satisfaction with workforce management
- Plans affected by workforce/skill gaps
- Cost of idle employees
- Attrition rate and exit reasons
- Employee satisfaction
- Employer brand/image
- Employee lifetime value and ROI
- Time to fill roles
- Cost per hire
- Skill development progress
- Staffing vs. service demand
- Critical position coverage rate
- Diversity metrics
- Satisfaction with workforce administration
- Audit findings and compliance success
- Cost-to-value ratio of administrative controls

Key roles specific to the practice

- Human resource manager

Key terms

Employee: any individual engaged to work within an organization.

Employee journey: the complete end-to-end experience that an employee has with the organization through touchpoints, relationships, and interactions.

Employee persona: a fictional yet realistic description of a typical or target employee of an organization.

Culture: a set of values shared by a group of people, including expectations about how people should behave, and their ideas, beliefs, and practices.

APPENDIX B | Mapping of value chain activities and management practices

As described in Chapter 4 and section 5.4, each value chain activity performed by an organization is enabled and supported by multiple management practices. There are two levels of involvement of a management practice in a value chain activity. Activities of some practices are directly involved in the value chain activity; these practices can be categorized as enabling (E in the table below). Other practices, though not directly involved in the value chain activity, support it with information and methods; these practices can be categorized as supporting (S in the table below). For example, the 'design' value chain activity is enabled by 17 practices (including service design, architecture management, measurement and reporting, and others) and supported by seven practices (including IT asset management, knowledge management, and others).

When organizations include a value chain activity in their operating model, they need to develop the relevant management capabilities. Note that not all practices listed in this table are always involved in the respective value chain activities. For example, organizational change management practice may be very important for designing digital products and services when the design requires changes to the service provider's or service consumer's organization. At the same time, this practice is not included in many cases of product and service design. The mapping provided here should be considered when organizations develop their value chains and management practices, but it should always be adapted to the organization's and product specifics.

Table B.1 Enabling and supporting management practices of the product and service management activities

	Discover	Design	Acquire	Build	Transition	Operate	Deliver	Support
Architecture management	E	E	E	E				
Availability management		E	S	E	S	E		S
Business analysis	E	E						
Capacity and performance management		E	S	E	S	E		S
Change enablement					E	E		E
Continual improvement	E	E	E	E	E	E	E	E
Deployment management				E	E			E
Incident management							E	E
Information security management		E	S	E	S	E		E
Infrastructure and platform management		E	S	E	E	E	E	S
IT asset management		S	E	S	E	S		S

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	Discover	Design	Acquire	Build	Transition	Operate	Deliver	Support
Knowledge management	S	S	S	S	S	S	S	S
Measurement and reporting	S	E	S	E	E	E	E	E
Monitoring and event management		E	S	E	E	E	E	E
Organizational change management		E		S	E			
Portfolio management	E	E						
Problem management		S				E	E	E
Project management		E	E	E	E			
Relationship management	E		S		S		E	E
Release management					E		E	E
Risk management	E	E	S	S	E	E	S	S
Service catalogue management		S			E		E	E
Service configuration management		S	E	S	E	S	S	S
Service continuity management		E	S	E	S	E	S	E
Service design		E						
Service desk							E	E
Service financial management	S	E	E	S	S	S	S	S
Service level management		S	S		S	S	E	E
Service request management							E	
Service validation and testing				E	E			S
Software development and management		E	S	E	S	E	E	S
Strategy management	S							
Supplier management	S	S	E	E	S	E	E	S
Workforce and talent management	S		E	E	S	E		
Number of enabling practices	**6**	**17**	**8**	**15**	**14**	**14**	**14**	**14**
Number of supporting practices	**6**	**7**	**12**	**6**	**11**	**5**	**5**	**11**

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Appendix C | A summary of ITIL roles

Each management practice has one or more specific roles (incident manager for incident management, architect for architecture management, tester for service validation and testing, and so on). These roles and related responsibilities are described in the Official Practice Guides and listed in Appendix A.

In addition to those, managing digital products and services may require more generic roles, which are typically established in most digitally enabled organizations. These roles may have different names, depending on the organizational culture and design, adopted frameworks, and other individual factors. Nevertheless, they can be grouped into a universal set of responsibilities, as shown in the table below.

Table C.1 Generic product and service management roles

Role established for...	...known as...	...is typically responsible for
Management, coordination, and improvement of a specific management practice.	• Practice owner • Practice manager • Process owner • Process manager • Capability manager	• Establishing and improving the practice. • Ensuring that the practice's policies and processes are followed by all involved practitioners. • Ensuring effective integration of the practice with other practices and organization's value streams. • Maintaining practice's relevance to the organization's priorities and objectives. • Securing necessary resources for the practice effectiveness and performance. • Ensuring the practice's compliance to the relevant external and internal requirements.
Management and improvement of a digital product or service throughout its lifecycle.	• Product owner • Product manager • Service owner • Service manager	• Defining and communicating the product vision. • Developing and owning the product roadmap. • Representing the voice of the customer, ensuring that the product solves real problems. • Conducting or collaborating on user research, usability testing, and persona development. • Prioritizing features based on user value, feasibility, and alignment with goals • Creating and managing the product backlog. • Managing the product/service team and its cooperation with other internal and external teams. • Ensuring the product and service quality throughout its lifecycle. • Managing relationships with the product and service stakeholders.
Organization, management, and continual improvement of the organization's	• Chief product officer • Head of product • Head of service	• Establishing objectives and policies for digital product and service management and use in the organization.

Role established for...	...known as...	...is typically responsible for
product and service management system.	• Chief digital officer • Chief information officer • Head of quality • Technology steering committee • IT governance board	• Selecting and adopting relevant frameworks, methods, and tools for digital product and service management. • Defining and implementing digital operating model, including the relevant value chain activities and management practices. • Leading relevant organizational changes. • Ensuring effective governance of the organization's management practices. • Ensuring that organization's value system is compliant with the relevant internal and external requirements.
Alignment with environmental, social, and governance (ESG) principles.	• Chief sustainability officer • Sustainability officer/ manager/lead • Digital sustainability lead • Green IT manager • Sustainable technology manager • ESG manager	• Developing and leading sustainability strategy aligned with business and digital strategy. • Defining and monitoring ESG goals and KPIs. • Promoting sustainable management and operational practices. • Collaborating with procurement to ensure suppliers meet sustainability and ethical standards. • Supporting compliance with environmental and sustainability regulations. • Integrating sustainability into product and service design. • Reporting on sustainability performance internally and externally. • Raising awareness and training colleagues on sustainable practices and digital responsibility. • Coordinating sustainability certifications or frameworks.
Compliance with laws, regulations, and internal policies; effective risk management	• Risk and compliance manager • Risk and compliance manager • Governance, Risk, and Compliance (GRC) manager	• Developing and maintaining risk management frameworks and policies. • Monitoring compliance with relevant regulations and industry standards. • Conducting or overseeing risk assessments, audits, and control testing across IT, digital products, and services. • Supporting policy development for data protection, cybersecurity, service continuity, and supplier risk. • Tracking regulatory changes and assessing their impact on products, services, and operations. • Reporting on risk and compliance status to senior leadership and regulatory bodies. • Supporting incident response and breach investigations, especially those with compliance implications. • Raising risk and compliance awareness.

Role established for...	...known as...	...is typically responsible for
		• Liaising with external auditors and regulators during assessments or investigations.

Appendix D | AI and Automation tools

Automation plays a vital role in digital product and service management, and its importance keeps growing. There are many software tools helping organizations in all aspects of product and service management. Some of these tools are designed to fulfil one specific function, others are multi-functional. Some are designed specifically to support digital product and service management, others have a wider applicability and target audience. ITIL does not refer to specific vendors and solutions; however, the Official Practice Guides provide a list of software tools supporting each practice, highlighting the key functionality of the tools (See Appendix A and the Official Practice Guides).

This appendix provides a short description of all software tools listed in the Official Practice Guides. ITIL Accredited Tool Vendor programme offers a comprehensive assessment of software tools for digital product and service management; an up-to-date register of the accredited tools can be found online. Visit our website for more information.

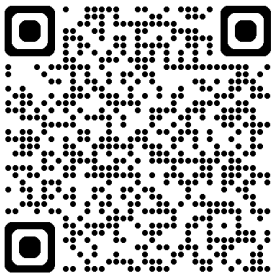


Table D.1 Automation tools listed in the Official Practice Guides

Tool Category	Purpose	Key Functionality
Analysis and reporting tools	Analysing data and generating reports	Data visualization, dashboard creation, and automated reporting.
Asset management tools	Tracking and managing IT and physical assets.	Asset inventory, lifecycle tracking, and depreciation management.
Automated testing tools	Automating software testing processes.	Unit testing, UI testing, regression testing, and test reporting.
Business continuity planning tools	Ensuring business operations during disruptions.	Risk assessment, recovery planning, and communication workflows.
Business process modelling tools	Visualizing and optimizing business processes.	Workflow mapping, simulation, and performance monitoring.
Capacity management tools	Predicting and managing IT resource usage.	Performance trend analysis, forecasting, and scenario planning.
CI/CD Tools	Continuous integration and continuous delivery/deployment.	Automated builds, testing, and deployment.
Collaboration and communication tools	Team communication and collaboration.	Messaging, video conferencing, file sharing, and integration with other tools.
Contract management tools	Managing contracts through their lifecycle.	Drafting, approval workflows, e-signatures, and compliance tracking.
CRM tools	Managing customer relationships and interactions.	Contact management, sales tracking, and marketing automation.
Emergency management tools	Planning and responding to emergencies.	Alerting, crisis communication, and incident tracking.
Enterprise architecture management tools	Documenting and analysing enterprise architecture.	Modelling, impact analysis, and strategy alignment.
External professional content libraries	Accessing to curated professional content.	Research databases, learning resources, and integration with LMS.
Financial management system (FMS)	Managing financial operations.	Budgeting, accounting, and financial reporting.
Geolocation and geofencing systems	Tracking and controlling access based on location.	GPS tracking, alerts, and boundary control.
Discovery and inventory tools	Detecting and inventorying hardware and software assets.	Auto-discovery, classification, and reporting.
Job scheduling tools for backup, batch, and other automated tasks	Automating repetitive tasks.	Job orchestration, calendar-based execution, and alerts.
Knowledge and document management tools	Storing and sharing knowledge. Automated information search and provision.	Version control, search, and access permissions. Search and request interfaces, intelligent chatbots.
Labelling, barcode, QR code reader systems	Identification and tracking via scanning	Code generation, scanning, and integration with databases.
Learning management system (LMS)	Delivering and managing training programs	Course creation, tracking, and assessments.
Monitoring and event management tools	Monitoring systems and responding to events	Alerting, performance tracking, and root cause analysis.

Tool Category	Purpose	Key Functionality
Orchestration and integration platforms	Connecting and automating IT workflows	API integration, workflow design, and data synchronization.
Procurement systems	Managing purchasing processes	Supplier management, order tracking, and invoice processing.
Remote administration, diagnosis, deployment, and other infrastructure and software management tools	Managing IT infrastructure remotely	Remote access, software deployment, and diagnostics.
Risk management tools (GRC tools)	Governance, risk, and compliance management	Risk assessments, audits, and policy management.
Security Information and Event Management (SIEM) tools	Detecting and responding to security threats.	Log analysis, threat detection, and alerts.
Service catalogue tools	Managing service offerings.	Catalogue creation, request handling, and self-service portals.
Service configuration management tools	Managing service configuration data.	CMDB management, dependency mapping, and audits.
Social media	Social engagement and communication.	Content sharing, messaging, and audience analytics.
Solution design and development tools	Building and prototyping solutions.	Diagramming, modelling, and collaborative design.
Survey tools	Gathering feedback and data.	Form creation, response analysis, and integration with other tools.
Supplier management tools	Managing relationships with suppliers.	Onboarding, performance tracking, and risk assessment.
System dynamics simulation software	Modelling and simulating systems over time.	Causal modelling, feedback loops, and forecasting.
Talent management and HR tools	Managing the employee lifecycle.	Recruitment, performance tracking, and learning development. Capturing and processing employee experience.
Value stream mapping and management tools	Mapping, analysing, and optimizing value streams	Mapping of value streams, tracking value stream metrics, analysing the flow, testing 'what-if' scenarios
Workflow and task management tools	Organizing and tracking work. Analysing and improving workflows.	Task assignment, progress tracking, and automation. Process analysis and automation

Appendix E | Steps of value stream mapping

As described in Section 6.3, value stream mapping includes the following steps:

- value stream identification
- mapping of the 'as-is' value stream
- analysing the value stream
- mapping a 'to-be' value stream
- planning and implementing improvements.

This appendix provides a brief description of these steps.

Value stream identification

Value streams are intended to enable value for service consumers, and their consumer-oriented outputs provide the best starting point for mapping the steps needed to create them. Most organizations have some form of customer-facing catalogue that describes their services and/or products. If such catalogue does not exist or is not reliable, a good starting point is to discuss with customers how they perceive the services they receive and the value they derive from them.

Value stream mapping should reflect how the work is done, rather than how it was designed. There are two ways to capture the 'as-is' flow of work and information:

- **Live value stream walk:** walk through or directly experience the steps and information flow as they go in practice (consider the Lean technique of Gemba walk). Identify the workflow steps; map them using a simple and clear notation.
- **Reverse mapping:** using records and interviews, restore the workflow working backwards from the selected output. For this approach, it is recommended to select workflows that are:
- **recent** and easy to remember
- **real** and clearly linked to a customer-facing output
- **representative** and applicable to many similar cases
- **established** and supported with sufficient evidence, records, and feedback.

A combination of the live value stream walk and available retrospective allows to map the real 'as-is' workflow and analyse it to understand how it could be improved.

When a value stream is identified, it is useful to link it to the designed workflows, as they may be supported with metrics and reports that will be useful for the value stream analysis. The ITIL Product and Service Lifecycle activities described in Chapter 4 provide a good starting point for detailed mapping and analysis of value streams. The ITIL Management practices help identify additional areas for analysis and improvement, along with sources of good practice.

Mapping the 'as-is' value stream

After identifying a value stream, the next steps involve:

- mapping the activities
- adding timing
- adding any other relevant information.

There is usually no need to follow formal value stream map notations designed for production environment as they may be too complicated for the purpose. Instead, many organizations do value stream mapping in the form of collaborative workshops, using sticky notes (paper or virtual) to represent the value stream activities. There is a growing number of software tools supporting this approach.

After mapping the activities, it is important to add timing. There are two key time metrics used for every step of a value stream:

Cycle time is the time it takes to complete one specific step of the value stream.

Wait time is the time spent waiting between the value stream steps.

From these, a few other metrics, describing the full value stream, are usually derived. The most indicative two are:

Lead time is the total time from initiation of the value stream workflow to delivery of the intended outputs.

Flow efficiency indicates the percentage of cycle time (or value-added time, see below) in the lead time.

Relevant information can be added to each step of the mapped value stream. This usually includes the teams performing the work, any third parties involved, and categorization of the activities. As an example, activities can be categorized based on their contribution to the intended value:

- **Value-adding:** activities that create value from a customer perspective.
- **Supporting:** supporting work that does not directly add value from a customer perspective.
- **Coordinating:** management and organizing activities.
- **Non-value-adding:** activities that do not add value from a customer perspective.

Analysing the value stream

The mapped value stream is then analysed to identify bottlenecks, dependencies, and improvement opportunities. The time metrics serve as a great source of information about the flow of work, delays, cycles, and overall efficiency of the stream.

There may be multiple areas for improvement in a value stream and the end-to-end analysis helps identify those that have the highest impact on the flow. Focusing on these bottlenecks helps achieve optimal results from the value stream improvements. The most impactful bottlenecks are not always the most obvious, and value stream mapping helps to see the big picture instead of focusing on the easiest and most familiar issues.

Although efficiency and flow optimization are often the key areas of value stream analysis, it is important to remember that a value stream is a flow that should deliver valuable outputs in an optimal way. Besides optimization of the delivery flow, analysis should address the quality of the outputs. In case of digital products and services value streams, this means the quality of services, satisfaction of users and customers, and value perceived by the service consumer. The efficiency of the flow can sometimes get in a conflict with the quality of the output. For example, the lead time for to deliver a new product version can be shortened by reducing or eliminating testing, which is likely to affect the quality. Value stream analysis should always consider both perspectives.

Mapping a 'to-be' value stream

Value stream analysis identifies external dependencies and internal capabilities that can be improved to optimize the flow and improve the quality of the outputs.

Having prioritized the bottlenecks to address, the team performing value stream mapping can model a 'to-be' version of the value stream and plan necessary improvements.

There are two types of 'to-be' value stream maps: an ideal value stream map and the future value stream map.

Ideal value stream map presents a perfect version of the value stream, with optimal flow and best possible outputs, zero delays between steps and all resources and capabilities available. This version of the value stream map can be created to inspire the teams involved in the value stream to work towards a better version of the current value stream.

The future (or 'the next') value stream map is used to plan feasible improvements and achievable targets for management of the current value stream. It is often used to document the expected state of the value stream in three-to-six months from the time of mapping.

The future state value stream map is not supposed to be 'implemented' overnight. Achieving the mapped state usually needs multiple improvements to internal capabilities and external dependencies. Moreover, as they will be implemented, circumstances are likely to change, and the real-life value stream most likely will not look exactly as planned in three-to-six months, even with all the improvements successfully implemented. However, it will, most likely, be better than it is today, with the main bottlenecks removed, and the flow and quality improved.

Planning and implementing improvements

Based on the value stream analysis and inspired by the 'to-be' value stream map(s), improvements to the current state should be planned and implemented.

Improvements to internal capabilities may address all Four Dimensions of Product and Service Management, from reorganizing teams and acquiring new competencies, to changing processes and implementing new automation tools.

Improvements to external dependencies my include changes to contracts with suppliers, ways of using external services, changing the ways of cooperation. This applies to external suppliers as well as to divisions of the same company outside of the scope of control of the organization performing the value stream improvement (for example, dependencies on HR, procurement, and legal teams that are seen as external to the digital technology department).

ITIL Official Practice Guides for continual improvement, organizational change management, and supplier management can be helpful in organizing and implementing value stream improvements. Large scale transformations may benefit from *ITIL Guide to Transformation*.

Appendix F | The ITIL Maturity Model

ITIL® 4 Maturity Model – Overview for ITIL Foundation Learners

Understanding the ITIL Maturity Model

What is the ITIL Maturity Model?

The ITIL Maturity Model is a framework and assessment tool designed to help organizations assess and improve their digital product and service management capabilities. It is based on ITIL, but it is flexible enough to be applied even by organizations that haven't formally adopted ITIL.

At its core, the model helps organizations understand how well they manage digital products and services and how effectively their value system supports value creation. It provides a structured approach to evaluating individual management practices as well as the overall maturity of the organization's product and service management system.

How the Model Is Designed

The model is made up of two key assessment dimensions:

1. Capability Assessments evaluate how well specific management practices are performed and managed. Each practice is assessed across five capability levels, from intuitive and informal (Level 1) to continually improving and optimized (Level 5).

2. Maturity Assessments focus on the overall service management system (the ITIL VS), which includes five core components:

- Guiding principles
- Governance
- Value chain
- Practices
- Continual improvement

Each component is evaluated across five maturity levels, ranging from 'initial' (ad-hoc and inconsistent) to 'optimizing' (fully aligned, data-driven, and continually improving).

Importantly, maturity is not just about using ITIL; it is about how well your organization is set up to manage and improve digital products and services, regardless of the adopted good practice or framework.

What It Helps Organizations Do

The ITIL Maturity Model supports organizations in several valuable ways:

- To identify strengths and weaknesses in both individual practices and the broader service management system.
- To plan targeted improvements using clear, evidence-based criteria.
- To monitor progress over time and ensure improvements are measurable.

- To benchmark against other organizations using standardized maturity levels.
- To gain external validation through certification, if required.

Key Benefits

1. Objective insight: the model uses structured criteria and evidence (for example, documents, interviews, performance data) to provide objective, repeatable assessments.

2. Tailorable: organizations don't need to assess all practices. Scoping can be customized based on business goals and priorities.

3. Strategic alignment: by linking assessment scope to organizational goals, it helps ensure that improvements support broader business strategy.

4. Support for continual improvement: the model embeds continual improvement into every type of assessment. It encourages organizations to measure, learn, and evolve, not just maintain the status quo.

Using the model in practice

Organizations can choose between three types of assessment depending on their needs and readiness:

Table F.1 Types of assessment

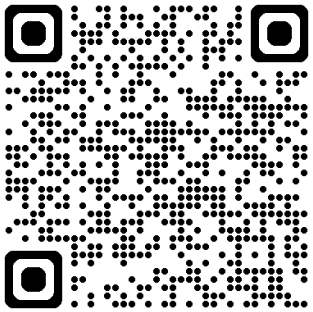
Assessment Type	Focus	Use Case
Comprehensive assessment	Practices + value system maturity	Strategic transformation & formal certification
High-level maturity assessment	Value system maturity only	Initial diagnosis or governance alignment
Selected practices' assessment	Individual practices' capabilities	Tactical improvement of specific practices

Each type of assessment helps identify where you are, what good looks like, and how to get there (see Section 5.6 for guidance on continual improvement).



Tip!
Capability criteria for individual practices and recommendations for self-assessment can also be found in the Official Practice Guides.

For more information about the ITIL Maturity module visit our website.



APPENDIX G | The ITIL Transformation Model

The *ITIL Transformation (Version 5)* Official book provides a model and a practical guidance for planning, running, evaluating, and adjusting organizational transformations. The guidance is primarily focused on transformations of organizations' value systems.

The guidance includes:

- **A transformation model:** four layers, twelve stages, and twenty-four steps.
- **Three types of patterns:** initiation patterns, governance patterns, and execution patterns.
- **A toolbox:** description of twenty-seven methods and tools supporting various transformation activities.

The *ITIL Transformation (Version 5)* guidance is flexible, structured, scalable, innovative, and supported by proven concepts, methods, and tools. It addresses the volatile, uncertain, complex, and ambiguous nature of today's business and technology environments and helps organizations to find the balance between manageability and flexibility.

The transformation model

The transformation model offered by this guidance includes four layers, twelve stages, and twenty-four steps. The layers apply to any transformation; the stages and steps vary depending selected execution pattern.

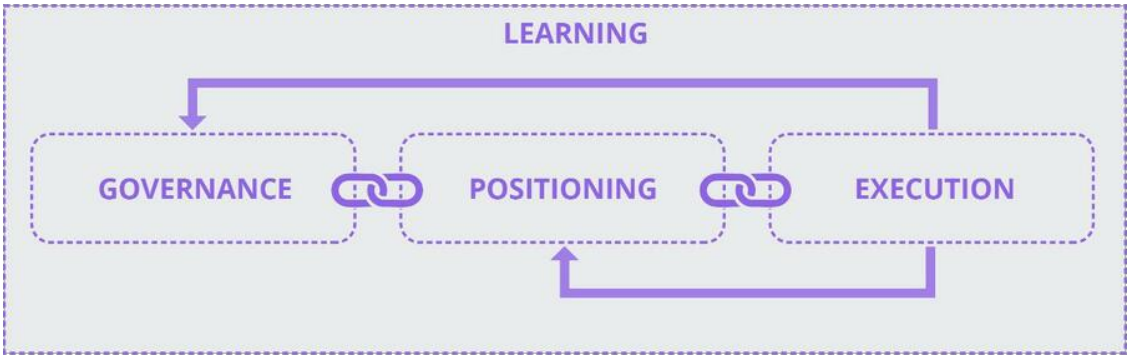


Figure G.1 The four layers of the transformation model (Fig. 3.2 from *ITIL Transformation*)

The four layers are Governance, Positioning, Execution, and Learning.

Governance: direction and boundaries are established while allowing for flexibility. Effective governance creates alignment between transformation and organizational strategy, ensuring efforts deliver meaningful value while preventing excessive control.

Positioning: the best-fitting approach for each situation is determined through contextual assessment. Through positioning, applying standardized methods to diverse contexts is avoided by matching approaches to the actual nature of each challenge.

Execution: changes are carried out using methods matched to context—whether ordered, complex, or chaotic. Through execution, opportunities are transformed into real-world actions through appropriate activities and techniques based on contextual understanding rather than habit.

Learning: insights are captured to improve current work and build future capability. Mechanisms are created to gather information, extract meaning, and apply understanding in ways that enhance transformation effectiveness over time.

Each layer includes a number of stages, as shown in Figure G.2

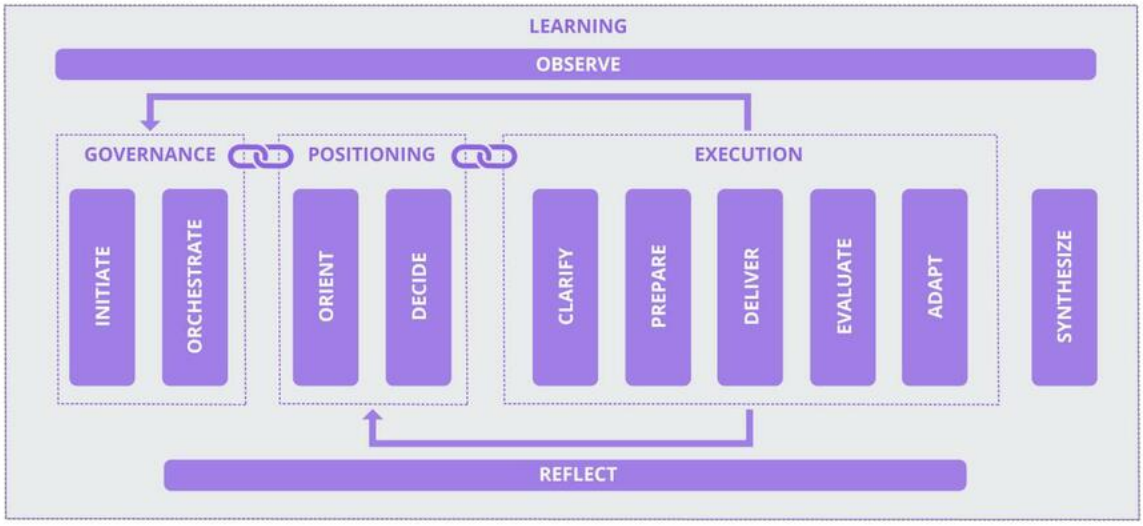


Figure G.2 The twelve stages of the transformation model

Most transformational initiatives include all 12 stages. However, some initiatives within a transformation may need to proceed straight to the Deliver stage. This depends on the execution pattern most appropriate for the transformation and initiative context (see below).

See section 3.1.4.2 of the *ITIL Transformation (Version 5)* Official Book for the detailed description of the stages.

Each stage includes one or more steps, as shown in Figure G.3.

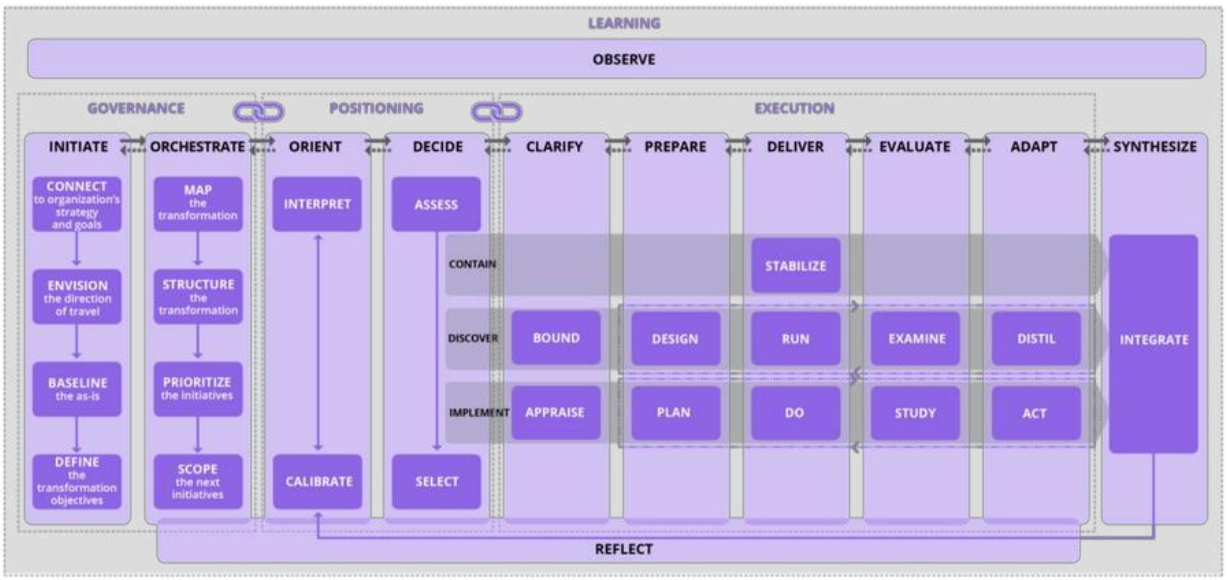


Figure G.3 The transformation model: layers, stages, and steps (Fig. 3.3 from *ITIL Transformation*)

The steps of the stages in Governance, Positioning, and Learning layers are universal and included in every transformation. The steps of the stages in the Execution layer depend on the selected execution pattern, as described below.

The patterns

The guidance describes three types of patterns:

- Execution patterns
- Initiation patterns
- Governance patterns

Execution patterns

Execution patterns describe how execution of initiatives and activities within a transformation varies depending on the complexity of the context. Most traditional frameworks and models for organizational change management are suitable for ordered, highly predictable contexts. In this guidance, this just one of common patterns, '**Implement'**. This pattern includes the following steps:

- Appraise
- Plan
- Do
- Study
- Act

Today, many transformation initiatives are happening in complex environments where traditional approaches designed for ordered context are not effective and may be harmful. For such situations, the guidance describes the '**Discover'** execution pattern. This pattern includes the following steps:

- Bound
- Design
- Run
- Examine
- Distil

These steps support hypothesis testing and experimentation and help organizations to find the best direction for further transformational efforts.

Finally, sometimes organizations face an urgent need to transform in response to significant external events. Examples include economic, environmental or societal crises which make normal operations impossible. In such cases, transformation initiatives and activities are needed to move the organization from a chaotic to a more manageable state where deliberate approaches become possible. The execution pattern supporting this scenario is '**Contain**', and it has only one step: Stabilize.

Initiation patterns

Initiation patterns describe common triggers of organization- and value system-level transformations and their impact on the transformation layers, stages, and steps.

The five initiation patterns are:

- Mandatory regulatory, compliance, or legal requirement
- Structural business change
- Reactive technology-driven change
- Internal improvement or remediation
- Business demand

Each of the five patterns identifies:

- **what** transformation is needed and **why**
- **who** wants the transformation
- and in many cases **when** the transformation is needed.

Governance patterns

The third group of patterns helps organizations to understand their established approach to governance, identify and adopt the optimal approach to the governance of a particular transformation. For situations where the established BAU governance pattern is not suitable for the transformation, the *ITIL Transformation (Version 5)* Official Book helps to bridge the gap.

The guidance describes four BAU governance patterns and four transformation governance patterns based on different approaches to authority and assurance.

Table G.1 Governance patterns, defined by authority and assurance

Authority	Assurance	BAU governance pattern	Transformation governance pattern
Centralized	Structured	Directive	Enhanced authority
Centralized	Emergent	Guided	Dedicated command
Distributed	Structured	Federated	Coordinated autonomy
Distributed	Emergent	Autonomous	Organic evolution

GLOSSARY

acceptance criteria

A list of minimum requirements that a service or service component must meet for it to be acceptable to key stakeholders.

architecture management practice

The practice of providing an understanding of all the different elements that make up an organization and how those elements relate to one another.

architecture principles

A set of norms and rules for the use and deployment of all resources and assets across an organization.

asset register

A database or list of assets, capturing key attributes such as ownership and financial value.

availability

The ability of an IT service or other configuration item to perform its agreed function when required.

availability management practice

The practice of ensuring that services deliver agreed levels of availability to meet the needs of customers and users.

band of visibility

The sum of the aspects of the service consumer organizations visible to the service provider, and the aspects of the service provider organizations visible to the service consumer.

baseline

A report or metric that serves as a starting point against which progress or change can be assessed.

best practice

A way of working that has been proven to be successful by multiple organizations.

big data

The use of very large volumes of structured and unstructured data from a variety of sources to gain new insights.

business analysis practice

The practice of analysing a business or some element of a business, defining its needs and recommending solutions to address these needs and/or solve a business problem, and create value for stakeholders.

business case

A justification for expenditure of organizational resources, providing information about costs, benefits, options, risks, and issues.

Business Impact Analysis (BIA)

A key activity in the practice of service continuity management that identifies vital business functions and their dependencies.

Business Relationship Manager (BRM)

A role responsible for maintaining good relationships with one or more internal customers.

capability

The ability of an organization, person, process, application, configuration item, or IT service to carry out an activity.

capacity and performance management practice

The practice of ensuring that services achieve agreed and expected performance levels, satisfying current and future demand in a cost-effective way.

change

The addition, modification, or removal of anything that could have a direct or indirect effect on products and services.

change authority

A person or group responsible for authorizing a change.

change enablement practice

The practice of ensuring that risks are properly assessed, authorizing changes to proceed and managing a change schedule in order to maximize the number of successful service and product changes.

change model

A repeatable approach to the management of a particular type of change .

change VFKHGXOH

A calendar that shows planned and historical changes.

FORXG FRPSXWLQJ

A model for enabling on -demand network access to a shared pool of configurable computing resources that can be rapidly provided with minimal management effort or provider interaction.

complexity thinking

An approach to analysis and decision -making based on the recognition and understanding of the various levels of complexity inherent in the systems and the context in which they operate.

compliance

The act and result of ensuring that a standard or set of guidelines is followed, or that proper, consistent accounting or other practices are being employed.

FRQ4GHQWLDOLW

A security objective that ensures information is not made available or disclosed to unauthorized entities.

FRQ4JXUDWLRQ

An arrangement of Configuration Items (CIs) or other resources that work together to deliver a product or service. Can also be used to describe the parameter settings for one or more CIs.

&RQ4JXUDWLRQ &L

Any product , service, or component that is within scope of the configuration management practice . Configuration items typically include hardware, software, networks, buildings, suppliers, products, services, and documentation.

&RQ4JXUDWLRQ 'DWDEDVH &0'%

A database used to store configuration records throughout their lifecycle. The CMDB also maintains the relationships between configuration records.

&RQ4JXUDWLRQ 6\VWHP

A set of tools, data, and information that is used to support service configuration management.

FRQ4JXUDWLRQ UHFRUG

A record containing the details of a Configuration Item (CI). Each configuration record documents the lifecycle of a single CI. Configuration records are stored in a configuration management database.

FRQWLQXDO LPSURYHPHQW

A recurring organizational activity performed at all levels of an organization to ensure that the organization continually meets stakeholders™ expectations.

FRQWLQXDO LPSURYHPHQW SUDFWLFH

The practice of aligning an organization™s practices and services with changing business needs through the ongoing identification and improvement of all elements involved in the effective management of products and services.

FRQWLQXRXV GHOLYHU

A set of techniques and tools that enable s software updates to be deployed to production at any time . Frequent deployments are possible, but deployment decisions are taken case by case, usually because organizations prefer a slower rate of deployment.

FRQWLQXRXV GHSOR\PHQW

A set of techniques and tool s that enable s every change that passes automated tests to be automatically deployed to production without additional authorization . Continuous deployment relies on continuous delivery .

FRQWLQXRXV LQWHJUDWLRQ

A set of techniques and tools that enables developers to frequently merge their code changes into a central repository, followed by automated builds and test s.

FRUH YDOXH

A value stream that enables value for consumers in a form intended by the organization™s operating model.

cost

The amount of money spent on a specific activity , resource , product or service.

cost centre

A business unit or project to which costs are assigned.

Critical 6XFFHVV)DFWRU &6)

A necessary precondition for the achievement of intended results.

FXOWXUH

A set of values shared by a group of people, expressed through people™s behaviour and their ideas, beliefs, and practices.

FXVWRPHU

The role that defines the requirements for products and services and takes responsibility for the outcomes of service consumption .

&XVWRPHU([SHULHQFH &;

The sum of functional and emotional interactions with a service and service provider as perceived by a service customer .

cycle time

The time it takes to complete one specific step of the value stream

dashboard

A real-time graphical representation of data.

data governance

A system of rules, policies, standards, processes, and controls organizations implement to manage their data assets effectively.

GHOLYHU DQG VXSSRUW

The value chain activity that ensures services are delivered and supported according to agreed specifications and stakeholders' expectations.

deployment

The movement of any service component into a controlled environment .

deployment management practice

The practice of moving new or changed hardware, software, documentation, processes, or any other service component to one of the controlled environment s.

design thinking

A practical and human -centred approach used by product and service designers to solve complex problems and find practical and creative solutions that meet the needs of an organization and its customers.

development environment

An environment used to create or modify IT services or applications.

DevOps

A cultural and professional movement that stresses communication, collaboration, and integration between software developers and IT operations professionals, while automating the process of software delivery and infrastructure changes. It aims at establishing a culture and environment where building, testing, and releasing software, can happen rapidly, frequently, and more reliably .

GLJLWDO SURGXFW

A combination of an organization™s resources based on digital technology and designed to offer value to consumers.

GLJLWDO DQG 6HUYLFH 0DQDJHPHQW

A set of specialized organizational capabilities for enabling value for customers in the form of digital products and services.

GLJLWDO 6HUYLFH 3URYLGHU

An organization responsible for the creation and continual improvement of digital product s and related service offerings.

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digital service

A service that fully or largely relies on digital product s.

digital transformation

The strategic adoption and integration of digital technologies into all areas of an organization , fundamentally changing how the organization operate s and creates value for customers and other stakeholders .

disaster

A sudden unplanned event that causes great damage or serious loss to an organization . A disaster results in an organization failing to provide critical business functions for some predetermined minimum period of time.

disaster recovery plans

A set of clearly defined plans related to how an organization will recover from a disaster as well as return to a pre -disaster condition, considering the four dimensions of service management .

H“HFWLYHQHVV

A measure of whether the objectives of a practice , service, or activity have been achieved.

H]FLHQF\

A measure of whether the right amount of resources have been used by a practice, service, or activity.

HQDEOLQJstream0XH

A value stream that enables value for internal customers to support the organization™s core value streams.

environment

A subset of the IT infrastructure that is used for a particular purpose, f or example a live environment or test environment . Can also mean the external conditions that influence or affect something.

error

A flaw or vulnerability that may cause incidents.

escalation

The act of sharing awareness or transferring ownership of a work item.

event

Any change of state that has significance for the management of a service or other configuration item.

external FXVWRPHU

A customer who works for an organization other than the service provider.

feedback

Information about stakeholder reactions and opinions, which is used as a basis for improvement.

feedback loop

A term commonly used to refer to a situation where part of the output of an activity is used for new input.

5RZ H]FLHQF\

A metric that indicates the percentage of cycle time (or value -added time) in the lead time .

IRXU GLPHQVLRQV RI SURGXFW DQG management

The four perspectives that are critical to the effective and efficient facilitation of value for customers and other stakeholders in the form of products and services.

goods

Tangible resources that are transferred or available for transfer from a service provider to a service consumer , together with ownership and associated rights and responsibilities.

governance

The system by which an organization is directed and controlled.

governance of digital technology

A human -based system by which the current and future use of digital technology is governed. The system comprises directing, overseeing and accountability .

incident

An unplanned interruption to a service or reduction in the quality of a service.

incident management practice

The practice of minimizing the negative impact of incidents by restoring normal service operation as quickly as possible.

information and technology

One of the four dimensions of product and service management . It addresses data, information, and technologies used in digital product s and services, as well as those used as part of the organization™s product and service management systems.

LQIRUPDWLRQ VHFXULW\ PDQDJHPHQW practice

The practice of protecting an organization by understanding and managing risks to the confidentiality, integrity , and availability of information.

LQIRUPDWLRQ VHFXULW\ SROLF

The policy that governs an organization™s approach to information security management.

LQIUDVWUXFWXUH DQG SODWIRUP PDQDJHPHQW practice

The practice of overseeing the infrastructure and platforms used by an organization . This enables the monitoring of technology solutions available, including solutions from third parties.

integrity

A security objective that ensures information is only modified by authorized personnel and activities.

LQWHUQDO FXVWRPHU

A customer who works for the same organization as the service provider.

Internet of Things (IoT)

A network of physical devices embedded with sensors, software, and other technologies that enable them to connect and exchange data with other devices and systems over the internet or other communication networks .

interoperability

The ability of computer systems or software from different vendors to operate together, and exchange and make use of information.

IT asset

Any financially valuable component that can contribute to the delivery of an IT product or service.

IT asset management practice

The practice of planning and managing the full lifecycle of all IT assets.

IT infrastructure

All of the hardware, software, networks, and facilities that are required to develop, test, deliver, monitor, manage, and support IT services.

ITIL

A framework and b est-practice guidance for digital product and service management .

ITIL &RQWLQXDO (PSURYHPHQW 0RGHO

A model which provides organizations with a structured approach to planning and implementing improvements.

ITIL Guiding Principles

Recommendations that can guide an organization in all circumstances, regardless of changes in its goals, strategies, type of work, or management structure.

ITIL Value System (VS)

A model representing how all the components and activities of an organization work together to facilitate value creation through digital product s and services.

Kanban

A method for visualizing work, identifying potential blockages and resource conflicts, and managing work in progress.

Key Performance Indicator (KPI)

An important metric used to evaluate the success in meeting an objective.

knowledge management practice

The practice of maintaining and improving the effective, efficient, and convenient use of information and knowledge across an organization.

known error

A problem that has been analysed but has not been resolved.

lead time

The total time from initiation of the value stream workflow to delivery of the intended outputs.

Lean

An approach that focuses on improving workflows by maximizing value through the elimination of waste.

lifecycle

The full set of stages, transitions, and associated statuses in the life of a service, product, practice, or other entity.

live

Refers to a service or other configuration item operating in the live environment.

live environment

A controlled environment used in the operation of digital products and delivery of digital services to service consumers.

maintainability

The ease with which a service or other entity can be repaired or modified.

PDMRU LQFLGHQW

An incident with significant business impact, requiring an immediate coordinated resolution.

management practice

A set of organizational resources and capabilities designed and adopted for performing work or accomplishing an objective.

management system

A system of interconnected elements that establish policy and objectives and enable the achievement of those objectives.

PDWXULW\

A measure of the reliability, efficiency, and effectiveness of an organization, practice, or process.

PHDVXUHPHQW DQG DQDO\VLV practice

The practice of supporting good decision-making and continual improvement by decreasing levels of uncertainty.

metric

A measurement or calculation that is monitored or reported for management and improvement.

0LQLPXP 9LDEOH 3URGXFW

A product with just enough features to satisfy early customers, and to provide feedback for future product development.

mission

A short but complete description of the overall purpose and intentions of an organization.

model

A representation of a system, practice, process, service, or other entity that is used to understand and predict its behaviour and relationships.

modelling

The activity of creating, maintaining, and utilizing models.

monitoring

Repeated observation of a system, practice, process, service, or other entity to detect events and to ensure that the current status is known.

monitoring and event management practice

The practice of systematically observing services and service components, and recording and reporting selected changes of state identified as events.

observability

The ability to understand the internal state of a complicated system by analysing its external outputs, such as metrics, logs, and traces.

operating model

A conceptual and/or visual representation of how an organization co-creates value with its customers and other stakeholders, as well as how the organization runs itself.

operation

The routine running and management of an activity, product, service, or other configuration item.

operational technology

The hardware and software solutions that detect or cause changes in physical processes through direct monitoring and/or control of physical devices such as valves, pumps, and so on.

organization

A person or a group of people that has its own functions with responsibilities, authorities, and relationships to achieve its objectives.

R U J D Q L] D W L R Q V S X U S R V H

Describes what an organization does for its consumers and other stakeholders and why .

organizational change management practice

The practice of ensuring that changes in an organization are smoothly and successfully implemented and that lasting benefits are achieved by managing the human aspects of the changes.

organizational resilience

The ability of an organization to anticipate, prepare for, respond to, and adapt to unplanned external influences.

organizational velocity

The speed, effectiveness, and efficiency with which an organization operates. Organizational velocity influences time to market, quality, safety, costs, and risks.

organizations and people

One of the four dimensions of product and service management . It ensures that the way an organization is structured and managed, as well as its roles, responsibilities, and systems of authority and communication, is well defined and supports its overall strategy and operating model .

R X W F R P H

A result for a stakeholder enabled by one or more outputs.

R X W S X W

A tangible or intangible deliverable of an activity.

R X W V R X U F L Q J

The process of having external suppliers provide products and services that were previously provided internally.

partners and V X S S O L H U V

One of the four dimensions of service management . It encompasses the relationships an organization has with other organizations that are involved in the design, development, deployment , delivery, support, and/or continual improvement of services.

partnership

A relationship between two organizations that involves working closely together to achieve common goals and objectives.

performance

A measure of what is achieved or delivered by a system , person, team, practice, or service.

pilot

A test implementation of a service with a limited scope in a live environment .

policy

Formally documented management expectations and intentions, used to direct decisions and activities.

portfolio management practice

The practice of ensuring that an organization has the right mix of programmes, projects, products, and services to execute its strategy within its funding and resource constraints.

problem

A cause, or potential cause, of one or more incidents.

problem management practice

The practice of reducing the likelihood and impact of incidents by identifying actual and potential causes of incidents, and managing workarounds and known errors.

procedure

A documented way to carry out an activity or a process.

process

A set of interrelated or interacting activities that transform inputs into outputs. Processes define the sequence of activities and their dependencies.

product

A configuration of an organization™s resources designed to offer value for a consumer.

product and service management activities

Activities performed by organizations to manage digital products and services through their lifecycle. Each of these activities is enabled and supported by several management practices.

product and service portfolio

A complete set of products and services that are managed throughout their lifecycles by an organization.

prototype

An initial version of a product or service that demonstrates its basic form, functionality, and operational capabilities. It is used to test and refine the product's design and functionality and test hypotheses. Prototypes vary in complexity and purpose, ranging from visual mockups to fully functional models.

purchase specification

A detailed document that outlines critical aspects, requirements, and characteristics of a product or service to be built. It typically includes descriptions of the product's features, functionalities, technical requirements, performance criteria, and user interface details.

quality assurance

See live environment.

programme

A set of related projects and activities, and an organization structure created to direct and oversee them.

project

A temporary structure that is created for the purpose of delivering one or more business products according to an agreed business case.

project management practice

The practice of ensuring that all an organization™s projects are successfully delivered.

quick win

An improvement that is expected to provide a return on investment in a short period of time with relatively small cost and effort.

record

A document stating results achieved and providing evidence of activities performed.

recovery

The activity of returning a configuration item to normal operation after a failure.

relationship management practice

The practice of establishing and nurturing links between an organization and its stakeholders at strategic and tactical levels.

release

A version of a product, service, or other configuration item, or a collection of configuration items, that is made available for use.

release management practice

The practice of making new and changed services and features available for use.

reliability

The ability of a product, service, or other configuration item to perform its intended function for a specified period of time or number of cycles.

U H T X H V W F D W D O R J X H

A view of the service catalogue, providing details on service requests for existing and new services, which is made available for the user.

5 H T X H V W I R U & K D Q J H 5 I &

A description of a proposed change submitted by a stakeholder.

U H V R O X W L R Q

The action of solving an incident or problem.

U H V R X U F H

Personnel, material, finance, or other entity that is required for the execution of an activity or the achievement of an objective. Resources used by an organization may be owned by the organization or used according to an agreement with the resource owner.

retire

The act of permanently withdrawing a product, service, or other configuration item from use.

risk

A possible event that could cause harm or loss, or make it more difficult to achieve objectives.

risk assessment

An activity to identify, analyse, and evaluate risks.

risk management practice

The practice of ensuring that an organization understands and effectively handles risks.

V D I H W \ F X O W X U H

An organizational culture in which people are comfortable being (and expressing) themselves.

service

A means of enabling value co-creation by facilitating outcomes that consumers want to achieve, without the consumer having to manage specific costs and risks.

service action

An action performed by a service provider or jointly by a service provider and a service consumer.

service D U F K L W H F W X U H

A view of all the services provided by an organization. It includes interactions between the services, and service models that describe the structure and dynamics of each service.

service F D W D O R J X H

Structured information about all the services and service offerings of a service provider, relevant for a specific target audience.

service F D W D O R J X H management practice

The practice of providing a single source of consistent information on all services and service offerings, and ensuring that it is available to the relevant audience.

service F R Q 4 J X U D W L R Q management practice

The practice of ensuring that accurate and reliable information about the configuration of services, and the configuration items that support them, is available when and where needed.

service F R Q V X P H U

An organization responsible for procurement and use of services.

service F R Q V X P S W L R Q

Activities performed by an organization to consume services. It includes the management of the consumer™s resources needed to use the service, service actions performed by users, and the receiving (acquiring) of goods (if required).

service F R Q W L Q X L W \ P D Q D J H P H Q W S U D

The practice of ensuring that service availability and performance are maintained at a sufficient level in case of a disaster.

service design practice

The practice of designing products and services that are fit for purpose, fit for use, and that can be delivered by the organization and its ecosystem.

service desk practice

The practice of providing the entry point and single point of contact with the service provider for all users , and capturing demand for incident resolution and service requests.

service 4 Q D Q F L D O P D Q D J H P H Q W S U D F W L F H

The practice of supporting an organization™s strategies and plans for service management by ensuring that the organization's financial resources and investments are being used effectively.

service M R X U Q H \

The sum of activities and interactions performed by organizations engaged in service relationship s to fulfil their roles as a service provider and a service consumer .

service level

A set of metrics that define expected or achieved service quality.

6 H U Y L F H Level $ J U H H P H Q W 6 / $

A documented agreement between a service provider and a customer that identifies the services provided and the agreed level of each service.

service level management practice

The practice of setting clear business- based targets for service performance so that the delivery of a service can be properly assessed, monitored, and managed against these targets.

service experience

The sum of the functional and emotional interactions with a service and provider as perceived by a stakeholder .

service R " H U L Q J

A formal description of one or more services designed to address the needs of a target consumer group. A service offering may include goods , access to resources, and service action s.

service provider

An organization responsible for delivery and support of services.

service provision

Activities performed by an organization to provide services. It includes management of the provider's resources configured to deliver the service; ensuring access to these resources for users; fulfilment of the agreed service actions; service level management; and continual improvement. It may also include the supply of goods .

service T X D O L W \

The sum of the characteristics of a service that are relevant to its ability to satisfy stated and implied needs.

service relationship

A cooperation between a service provider and service consumer . Service relationships include service provision, service consumption , and service relationship management .

service relationship management

Joint activities performed by a service provider and a service consumer to ensure continual value co-creation based on agreed and available service offerings.

service U H T X H V W

A request from a user or a user™s authorized representative that initiates a service action which has been agreed as a normal part of service delivery.

service U H T X H V W management practice

The practice of supporting the agreed quality of a service by handling all pre - defined, user- initiated service request s in an effective and user-friendly manner.

service validation and testing practice

The practice of ensuring that new or changed products and services meet defined requirements.

service Y D O X H

The perceived benefits, usefulness, and importance of a service

6 L Z H Reliability (Q J L Q H H U L Q J 6 5 (

A discipline that incorporates aspects of software engineering and applies them to

infrastructure and operations problems. The main goal is to create scalable and highly reliable software systems.

software development and management practice

The practice of ensuring that applications meet stakeholder needs in terms of functionality, reliability, maintainability, compliance, and auditability.

V R X U F L Q J

The activity of planning and obtaining resources from a particular source type, which could be internal or external, centralized or distributed, and open or proprietary.

V S H F L 4 F D W L R Q

A documented description of the properties of a product, service, or other configuration item.

sponsor

The role that authorizes budget for service consumption.

stakeholder

A person or organization that has an interest or involvement in an organization, product, service, practice, or other entity.

standard

A document established by consensus and approved by a recognized body that provides, for common and repeated use, mandatory requirements, guidelines, or characteristics for its subject.

standard change

A low-risk, pre-authorized change that is well understood and fully documented and which can be implemented without needing additional authorization.

V W D W X V

A description of the specific states an entity can have at a given time.

strategy management practice

The practice of formulating the goals of an organization and adopting the courses of action and allocation of resources necessary for achieving those goals.

V X S S O L H U

An organization responsible for supplying goods and providing services that are used by another organization.

V X S S Or n H ag ement practice

The practice of ensuring that an organization™s suppliers and their performance levels are managed appropriately to support the provision of seamless quality products and services.

V X S S R U W W H D P

A team with the responsibility to maintain normal operations, address users™ requests, and resolve incidents and problems related to specified products, services, or other configuration items.

s X V W D L Q D E L O L W \

The assurance that a product or service meets and will continue to meet the requirements for environmental stewardship, social progress, and economic growth.

swarming

A technique for solving various complex tasks. In swarming, multiple people with different areas of expertise work together on a task until it becomes clear which competencies are the most relevant and needed.

system

A combination of interacting elements organized and maintained to achieve one or more stated purposes.

systems thinking

A holistic approach to analysis that focuses on the way that a system™s constituent parts work, interrelate, and interact over time and within the context of other systems.

technical debt

The implied cost of additional rework caused by choosing an easy solution now instead of a better approach that would take longer.

test environment

A controlled environment established to test products, services, and other configuration items.

testing

The activity in which a system or component is executed under specified conditions, the results are observed or recorded, and an evaluation of some aspect or component of the system is made.

third party

A stakeholder external to an organization .

W K U R X J K S X W

A measure of the amount of work performed by a product , service, or other system over a given period of time.

transaction

A unit of work consisting of an exchange between two or more participants or systems.

X V H F D V H

A realistic practical scenario used to define functional requirements and to design tests.

X V H U

The role that uses services.

User ([S H U L H Q F H 8 ;

The sum of the functional and emotional interactions with a service and service provider as perceived by a service user .

X V H U H[S H U L H Q F H

An interaction (for example, a telephone call or a chat) with the service desk, initiated by a user or user representative. A user query could result in an incident or a service request being logged.

X W L O L W \

The functionality offered by a product or service to meet a particular need. Utility can be summarized as ‚what the service does™ and can be used to determine whether a service is ‘fit for purpose’. To have utility, a service must either support the performance of the consumer or remove constraints from the consumer. Many services do both.

X W L O L W \ U H T X L U H P H Q W V

Functional requirements which have been defined by the customer and are unique to a specific product.

validation

The activity of confirming that the proposed product and service design meets agreed requirements and establishing acceptance criteria for the next lifecycle stages.

Y D O X H

The perceived benefits, usefulness, and importance of something.

Y D O chain

An entire set of activities that enables value through the provision of a product or service.

Y D O chain activities

Activities performed by organizations to manage digital product s and services through their lifecycle . Each of these activities is enabled and supported by several management practice s.

Y D O stream

A series of steps that an organization uses to create and deliver products and services to a service consumer .

Y D O streams and processes

One of the four dimensions of service management . It defines the activities, workflows, controls, and procedures needed to achieve the agreed objectives.

vision

A defined aspiration of what an organization would like to become in the future.

wait time

The time spent waiting between the value stream steps.

warranty

The assurance that a product or service will meet the agreed requirements. Warranty can be summarized as ‚how the service performs™ and can be used to determine whether a service is ‘fit for use’. Warranty often relates to service level s aligned with the needs of service consumers. This may be based on a formal agreement, or it may be a marketing message or brand image. Warranty typically addresses such areas as the availability of the service, its capacity, levels of security, and continuity. A service may be said to provide acceptable assurance, or ‘warranty’, if all defined and agreed conditions are met.

warranty U H T X L U H P H Q W V

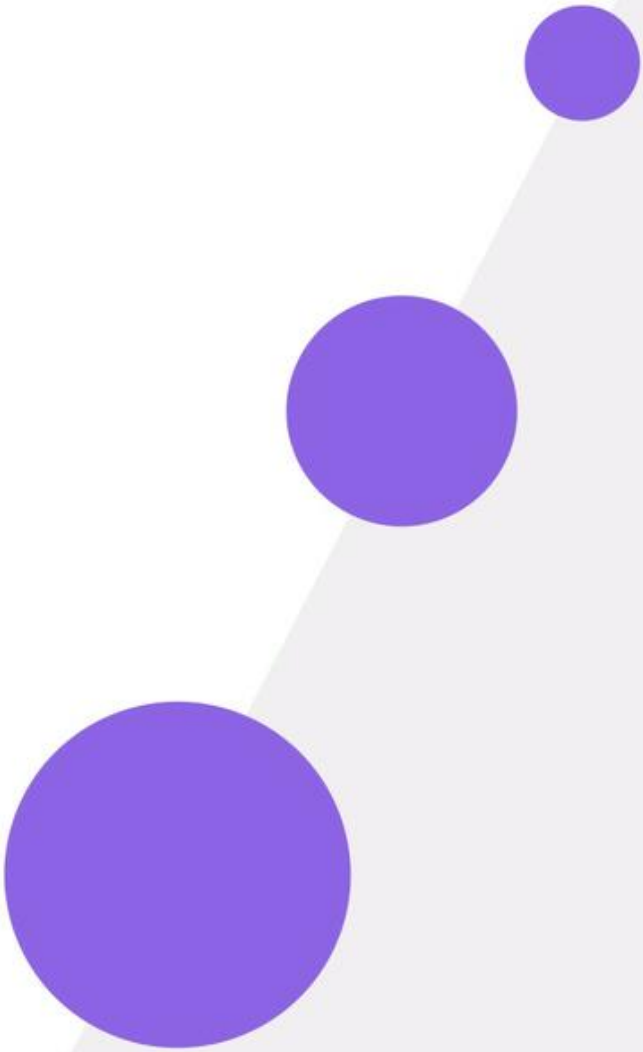
Typically non- functional requirements captured as inputs from key stakeholders and other practices.

Z R U N D U R X Q G

A solution that reduces or eliminates the impact of an incident or problem for which a full resolution is not yet available. Some workarounds reduce the likelihood of incidents.

workforce and talent management practice

The practice of ensuring that an organization has the right people with the appropriate skills and knowledge and in the correct roles to support its business objective s.



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