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# ITIL 4 – A Holistic View of Service Management

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## Introduction – The Casualties of Frameworks Going to War

In principle, the primary goal of an IT service management (ITSM) framework is to provide a published body of knowledge (BoK) so professionals can improve their ability to deliver value to the larger community they serve. However, most IT organizations struggle with a silo mentality regarding culture, processes, and tools.

This cultural dynamic has unfortunately influenced the way the industry tends to write, use, and sometime misuse the assets and resources it's been given. This has also been fueled by the fact that various IT communities have developed their BoKs, management frameworks, and automation strategies around a principle of specialization versus integration.

We hold onto a desire to be separate and distinct, rather than acknowledging that all IT management capabilities we perform are part of an integrated value system. This means we often use our tools as weapons to threaten others and damage the very goals we say we espouse. Seeking and even demanding independence from all that has gone before, we write our slogans on blogs, preach our rhetoric through webinars, and weaponize our frameworks by turning useful knowledge into war banners. How many times have you heard the phrase: "Framework X is here – framework Y is dead!"?

The good news is various communities of practice are finally understanding the only way to gain the organizational velocity required for achievement in the digital age is to put down our gauntlets, abandon the chip on our shoulder, and get down to doing the hard and right thing by working together. The new question is: How do we find a way to integrate our management approaches for the common good of the organizations we serve?

In this paper, we will look at how the ITIL® 4 architecture has been designed to provide an overall holistic perspective of IT service management capabilities. We'll also see how service management has changed to refer to all organizational capabilities working together to provide value within the context of a service value system (SVS).

## The Evolution of Service Management

The term service management has evolved and expanded over the past decade to include all areas of expertise (planning, architecture, development, testing, operations, etc.) related to delivering value in the form of products and services.

ITIL 4 literature provides the following definitions:

***Service management*** *is a set of specialized organizational capabilities for enabling value to customers in the form of services.*[1]

***IT Service Management*** *is the application of service management to IT.*[2]

This means service management as a concept is characteristic of any service provider regardless of the context or industry. As defined above, ITSM is the application of service management principles to information technology. While this definition makes sense in a holistic way, this was not always the case.

Many will remember a time in the not-so-distant past when the phrase IT service IT service management was equal to ITIL. This term initially entered our vocabulary due to a need to talk about IT management best practices without causing people to be turned off and/or shutting down the conversation. The reason for this challenge could be a reflection of this famous quote by Saint Augustine, “Never judge a philosophy by its abuse.”

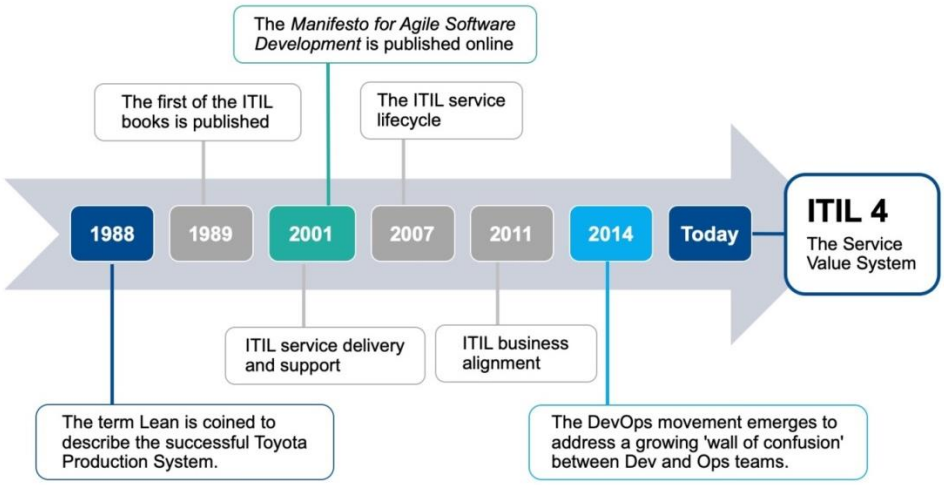
Many organizations adopted ITIL and looked to it as a cure-all. This was not helped by individuals and organizations that marketed ITIL as the “easy button” to solve all IT woes, rather than propose it be used as a reference model to accelerate improvement through its adoption and adaption to their own environments.

Hopeful organizations spent millions of dollars on training and bought the latest ITSM tool so they could avoid dealing with leadership and cultural issues by installing best practices. This was based on the promise that process documentation and tools would somehow change attitudes and beliefs and, ultimately, the organizational culture. This resulted in a dismal failure, the dashing of hopes, and a simmering anger from people

[1] AXELOS. *ITIL® Foundation, ITIL 4 edition*. London: TSO, 2019
[2] *ibid*

and organizations that believed they had been duped. Many organizations outright banned the mention of ITIL.

The problem remained as organizations struggled with the necessity to establish mature practices to engage with their service consumers, handle the intake of demand, support planning, guide development, and stabilize operations. While addressing these challenges, the community of professionals understood the value of using a defined and standard approach to IT management capabilities. They coined the term service management and used ITIL, COBIT®, Lean, project management, Agile, or whatever other reference models that became available, to get real work done to support the goals of the organization. So, in summary, the term service management grew in context to reflect what it actually empowers today: "a set of specialized organizational capabilities for enabling value to customers."[3]






## The Evolution of ITIL 4

A contributing factor in the evolution of service management is found in the concepts and principles of Lean that were developed by Toyota as part of the Toyota Production

[3] AXELOS. *ITIL® Foundation, ITIL 4 edition*. London: TSO, 2019.

System (TPS) in the 1950s. These were initially adopted by the software development community during the formation of Agile and then DevOps practices in the early 2000s.

A major element of Lean thinking focuses on gaining an understanding of the holistic or big-picture aspects of the total value system and promotes the continuous flow and improvement of the work necessary to support customer value. From its adoption by the Agile community, Lean thinking models and practices have since shaped our entire industry. This had a major design influence on the architecture and high-level models of ITIL 4 such as the service value system (SVS) and the service value chain. In addition, this provided a focus on how value streams flow through and interact with various IT management practices for the purpose of delivering value via products and services.

To truly understand the current focus and future direction of service management, it's important to first have a high-level understanding of some key tenets of systems thinking.

## A Systems Thinking Approach

A systemic or holistic approach to value creation includes understanding how all the parts of the organization work together in an integrated way to deliver value. This provides end-to-end visibility and appropriate controls, and is essential to the achievement of both organizational agility and resilience. It also creates velocity through alignment to achieve an exceptional performance that encompasses the time to market, quality, safety, improved costs, and reduced risk through mastering continual improvement and innovation.

A core design element of the ITIL 4 architecture is based on the principle of systems thinking, which was first coined as a term by Barry Richmond in his research based on systems dynamics and systems thinking. It was made popular by Peter Senge in the business community through his book *The Fifth Discipline, the Art and Practice of Learning Organizations*. The principles and concepts of systems thinking are integral to the ITIL 4 architecture and are represented in high-level models such as the service value system and the service value chain. Understanding how to manage different end-to-end value streams through the service value chain is also crucial.

## Systems Thinking

> *Systems thinking is a set of synergistic analytic skills used to improve the capability of identifying and understanding systems, predicting their behaviors, and devising modifications to them in order to produce desired effects. These skills work together as a system.*[4]

Systems Thinking Characteristics:[5]

1. Recognizing interconnections
2. Identifying feedback
3. Understanding dynamic behavior
4. Differentiating types of flows and variables
5. Using conceptual models
6. Creating simulation models
7. Testing policies

## Systems Thinking Mental Models

Three key thinking models required by systems thinking include:

- **Holistic Thinking:** To develop an awareness of the full or larger picture of all the elements that make up the full system and its boundaries.

- **Dynamic Thinking:** To develop an understanding that the system is constantly being impacted and subsequently evolving, based on both internal and external drivers that change the system's composition and behaviors over time. Dynamic thinking requires individuals and teams to continually evaluate and understand the system's current state.

[4] Arnold, Ross & Wade, Jon. (2015). "A Definition of Systems Thinking: A Systems Approach". Procedia Computer Science. 44. 669-678. 10.1016/j.procs.2015.03.050.
[5] Stave, Krystyna & Hopper, Megan. (2007). "What Constitutes Systems Thinking? A Proposed Taxonomy".

- **Closed Loop Thinking:** To develop an understanding of the cause and effect of changes within one part of the system and how it impacts related or downstream system elements and/or practices.

### Systems Thinking Skills

Systems thinking requires organizations and individuals to develop the skills and ability to both analyze and synthesize:

- **Analysis** (or convergent thinking) is focused on the ability to look at a complex concept or object and break it down into its constituent parts for the purpose of understanding, managing, and improving.

- **Synthesis** (or divergent thinking) is focused on seeing how seemingly separate things might work together to achieve a collective objective.

To establish a system approach, an organization first needs to understand how it works today and measure the delivery of value in alignment with its strategy. This includes the three dimensions of value defined by Lean (quality, speed, and cost).

Systems thinking forms the basis of the three pillars of Agile Scrum, which focuses on creating *transparency* in order to enable *inspection* and *adaptation**.*** It also informs the principles of the Theory of Constraints (ToC) described by Eli Goldratt in his book, *The Goal*, that had a major impact on the manufacturing industry in the 80s. Goldratt illustrated the importance and need to understand the full set of system elements to discover the bottleneck(s) in any process. Otherwise, a lack of systemic understanding will generate localized improvements that can potentially negatively impact the overall system velocity.

A warning that's described in *The Goal* is often seen as an example of the potential negative impact of silo-based cultures. "'Seeing the bigger picture' is vital - you cannot manage what you do not see and are not aware of!"[6]

If we focus solely on optimizing individual components in a siloed way, we will fail to deliver value or potentially create localized improvements that have adverse impacts on

[6] Goldratt, Eliyahu M. (2014, fourth revised edition). *The Goal*. North River Press, Massachusetts.

other aspects of the system and can detract from overall system objectives. Culturally and organizationally, we must shift from optimizing individual parts of the organization towards an integrated approach that optimizes the flow of products and services through the value streams that flow through the organization to the customer.

## A Systemic Approach to Understanding Value

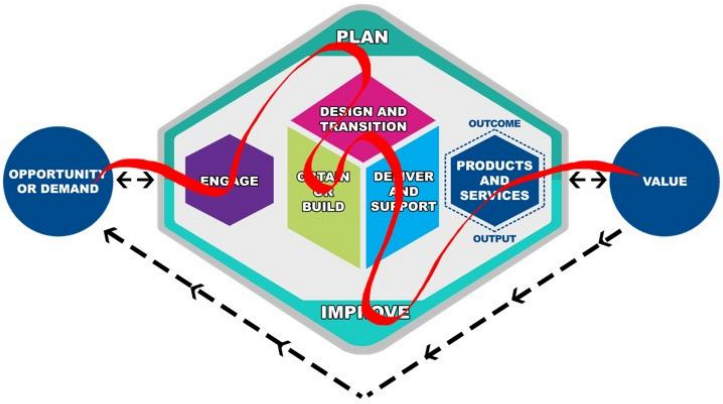
Traditionally, ITIL and other frameworks have focused on quality as the primary component of measurement. Quality equals the delivery of expected utility (functional) and warranty (non-functional) requirements. Lean and systems thinking expand this to include the speed at which value flows through the system as well as the comparative cost for delivering value based on competitive alternatives.

To measure throughout the system, you first have to understand the value system and then be able to analyze that system for locations where organizations experience issues with flow and velocity.

Understanding and measuring the rate of flow is described as measuring:

- Lead time – time from the customer's request to the value delivered
- Cycle time – time from the beginning to the end of work, including both active as well as wait times

These systemic measures are not concerned with measuring any one practice or process but rather on the rate of flow through the full system. The ITIL 4 service value chain enables organizations to map and measure how various value streams flow through the system, interacting with different practices to support the goal of value delivery.






This allows us to clearly see the flow of value through the organization and use that end-to-end visibility and appropriate controls to continually improve that flow.

## The Benefits of Taking a Systemic/Holistic View

Viewing the organization as a system can provide insights different from those identified by analyzing the individual components of the system. Dr. Edward Deming, Peter Senge, and many others have demonstrated in their writings that taking a system view and creating a discipline of feedback loops will create learning opportunities. This can give tangible strategic advantages to organizations seeking to improve and achieve their objectives. In the IT industry, organizations are increasingly realizing the impact of this concept on their ability to scale and deliver value at speed.

For an organization to be effective and efficient in carrying out its activities, it needs to first and foremost understand its environment and the market(s) in which it operates. This includes the organization's competitive position. Then the organization needs to pull together all its capabilities and resources, including people, information, practices, technologies, and relationships with other parties into one coherent and functioning value system. This allows the system to produce the desired products or services. Each part of the whole organization is a component of the system and it's important to understand the interfaces between these components.

## The IT Service Management System & Reference Architectures

One way to present a holistic view of the full service value system and to represent the role that ITIL practices play within this context is to leverage the concept of a reference architecture.

> ***Reference Architecture:*** *"*a predefined architectural pattern, or set of patterns, possibly partially or completely instantiated, designed, and proven for use in particular business and technical contexts, together with supporting artifacts to enable their use."[7]

By referring to ITIL as a reference architecture, it enables organizations to have a starting place to establish what their organizational operating model should or could be, based on a starting position that does not require them to start from scratch.

If you consider that a reference architecture is a starting place as opposed to an ideal or perfect model, it enables organizations to accelerate their own definition of their desired target state for the purposes of planning and prioritization of improvement.

The reference architecture concept aptly fits this objective in that a complex value system can be represented as a collection of loosely coupled architectures. To support this goal, this brief definition of architecture describes the major components of the IT service management value system.

> ***Architecture:*** *"*A unifying or coherent form or structure of connected or related resources created as part of a conscious act to perform an intended purpose."[8]

While there are as many definitions of the word architecture as there are groups that call themselves architects, it is useful to leverage this general definition to depict the following significant elements of an IT service management system.

[7] Rational Unified Process (RUP) IBM
[8] *Miriam-Webster Dictionary*

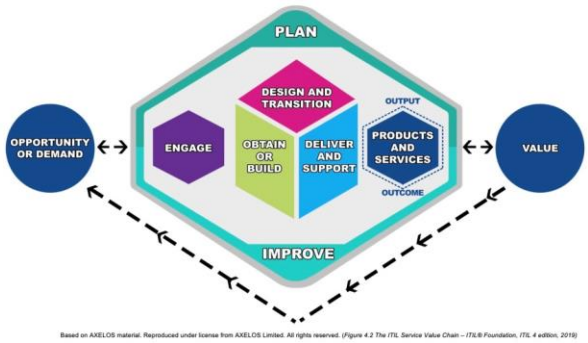
## A Holistic Service Management System

A service management organization can be described and structured as a collection of interconnected reference architectures that represent the loosely coupled component parts of the system. The following list represents five primary structures that collectively represent a holistic view of a service management system. Each of these architectures requires governance and management as a unique system component, but also needs to be governed and managed as a related system, or a system of systems.

> ***Systems Science*** "is the ordered arrangement of knowledge acquired from the study of systems in the observable world, together with the application of this knowledge to the design of man-made systems."[9]

From a systems thinking perspective, each of these five major system components characterize an integrated value system that collectively works together to produce product and service outcomes.

1. **Service Value Chain Architecture:** Represents the full set of large-scale activities and management practices required for an organization to create, enhance, and sustain value through the delivery or coordination of products and services to internal and external customers. The COBIT manage enterprise architecture process refers to this reference architecture as a business process architecture. ITIL 4 also calls attention to this architecture. The three following architectures (along with value streams and processes) comprise the four dimensions of service management:




[9] M'Pherson PK. 1974. "A Perspective on Systems Science and Systems Philosophy". Futures 6: 219–239, p 229.

2. **Information, Systems & Technology Architecture:** Represents the information and technology assets, resources, platforms, environments, applications, and data that collectively produce and deliver the technical solutions needed to automate and enable digital customer outcomes.

3. **Organization & People Architecture:** Represents the internal structures, teams, roles, and individuals that collectively work together within and across each of the other architectures to deliver or coordinate the delivery of value via products and services. The proactive governance and management of organizational knowledge and skills are critical success factors for the service management system.

4. **Partners & Suppliers Architecture:** Organizations are increasing their use of third-party partners and suppliers. However, the growing complexity of the IT supply chain creates new challenges around alignment, shared priorities, and service delivery. To address this challenge, IT service providers need to establish process and service governance structures to bring coherence to their complex IT supply chain.

These four architectures collectively work together to produce value and customer outcomes by enabling the fifth service management system component, the product and services architecture:

5. **Product and Services Architecture:** Represents the combined output of each of the other system component architectures and represents a blending of people, management practices, and technology to deliver outcomes and value for both internal and external customers.

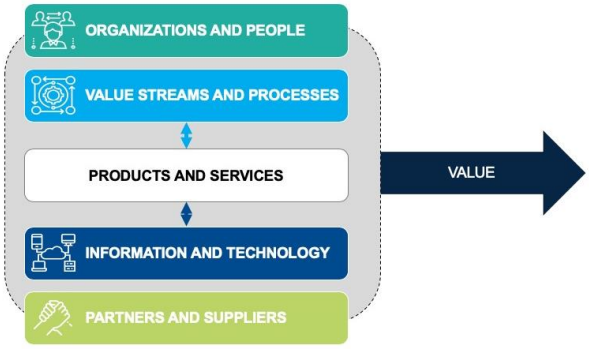



Figure: The Four Dimensions of Service Management System + Products & Services (An Architecture View) ~ Pink Elephant

The objective of presenting the service management system in the form of a set of loosely coupled architectures is to reinforce the understanding that these system components are linked and interdependent. They also need to be understood and managed as both separate but connected and dependent system components.

Referring back to the thinking models of systems thinking ensures we consider the service management system through the lens of the three key thinking models – holistic, dynamic, and closed loop (described earlier in this document).

For IT service providers to be successful and effectively deliver value to their customers, it is critical that the organization has awareness of the full service management system. It must also ensure each of the key reference architectures is proactively governed and managed.

## Applying Systems Thinking to Frameworks & Models

One of the goals of the ITIL 4 service management framework is to provide a holistic and integrated perspective of the primary components of the service management system. As presented above, one of the key architectures of the IT value system is the service value chain. This represents the various management practices, processes, roles, and activities required for organizations to be successful in delivering products, services, and outcomes to their customers.

To that end, there no shortage within the information technology industry of available best practices and documented “how to” guidance. IT as an industry has the advantage of having multiple associations, bodies of knowledge, and best practices libraries.

However, as each new framework or model emerges, it typically does so as an isolated set of practices focused on specific parts of the overall IT service value system. For example:

- Organizational governance
- Relationship management
- Organizational change management
- Architecture
- Information security management
- Project management
- Software development
- Continuous delivery
- Knowledge management
- Service desk
- Vendor management
- Structured problem solving
- Risk management
- Etc.

There are many models and IT frameworks that provide the IT industry with knowledge, addressing specific areas of capability and specialization. It isn’t that these frameworks do not each have value, or that individually they are not useful. However, due to leadership challenges, internal politics, and a lack of alignment and agreement, organizations will often adopt these practices in isolation or, even worse, position them as competitive – as was described in the introduction of this paper.

Leaders and service management professionals who practice the systems-thinking skill of synthesis realize the impact and benefit of taking an integrated approach to how these practices work together is far greater than the sum of their parts.

In my opinion, ITIL 4’s new value proposition to the industry is that it provides an overall big-picture-view reference architecture (or meta model for our friends in the engineering

field) of how the "set of specialized organizational capabilities for enabling value to customers in the form of services"[10] work together to support the goal of creating value.

In essence, it provides a systemic or holistic approach to understanding how different management frameworks and bodies of knowledge work together.

- **Metamodel:** "A model which is intended to give an all-inclusive picture of a process, system, etc., especially by abstracting from more detailed individual models contained within it."[11]

It's important to point out ITIL 4 does not seek to replace these models, but rather to provide a picture of how they can work together. Where ITIL has traditionally developed and published deep knowledge around best practices, it will continue to provide detailed guidance. In areas where other bodies of knowledge have developed in their own communities, ITIL 4 will reference and link to those frameworks.

To use a *Lord of the Rings* metaphor, ITIL 4 is not the single ring to rule them all, but rather it provides an integrated and holistic view of IT service management. There is no single best-practice model or framework. It is important to understand that the only way to achieve effective and efficient management of IT in this rapidly evolving and dynamic system is to combine the available management practices and standards to achieve the best results.


[10] AXELOS. *ITIL® Foundation, ITIL 4 edition*. London: TSO, 2019.
[11] *Oxford Dictionary*

**In Summary:**

To use a metaphor, our current IT environment is complex with many moving and connected pieces. Think of a jigsaw puzzle – with all the pieces in the box and the final picture on the front…

In many ways, IT service management is a puzzle we are trying to piece together and solve.

The goal of ITIL is to provide the picture on the front of the puzzle box.

This allows organizations, leaders, and service management professionals to connect the parts that exist, identify the parts that are missing, and improve the overall picture for maximum customer benefits.

## About the Author

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VP, Research & Development, Pink Elephant, author, industry thought leader, ITIL Expert, Agile Scrum Master, COBIT®, LITP, OCMP

Troy is considered by many to be one of the world's foremost ITIL and ITSM experts; he is currently working on the ITIL 4 update as a member of the Lead Architect Team. As a leading IT governance and service management authority, Troy has exceptional expertise in Lean IT and DevOps as well as an extensive background in executive IT management training and consulting – with more than 20 years' experience. He is also a published and contributing author for multiple books on topics such as Lean IT, the service catalog, and official ITIL publications for editions (2, 3, and 4). A frequent speaker at IT management events, Troy was recently named one of the "Top 25 Industry Influencers in Tech Support and Service Management" by HDI

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