Welcome to the ITIL® Foundation Training Program!

This program is developed and delivered in alignment with ITIL 4 edition of the ITIL® best practice framework.

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A few of the diagrams as well are reproduced and those are specifically acknowledged.

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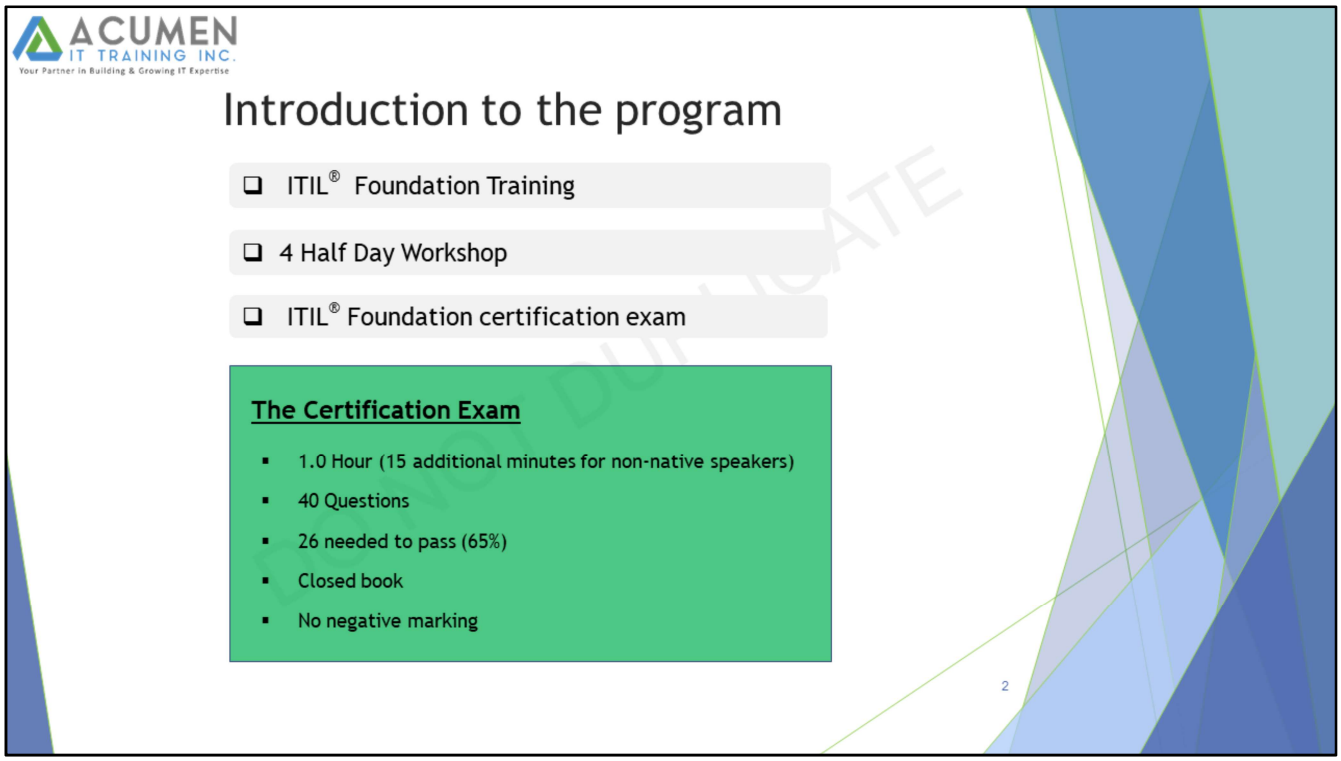
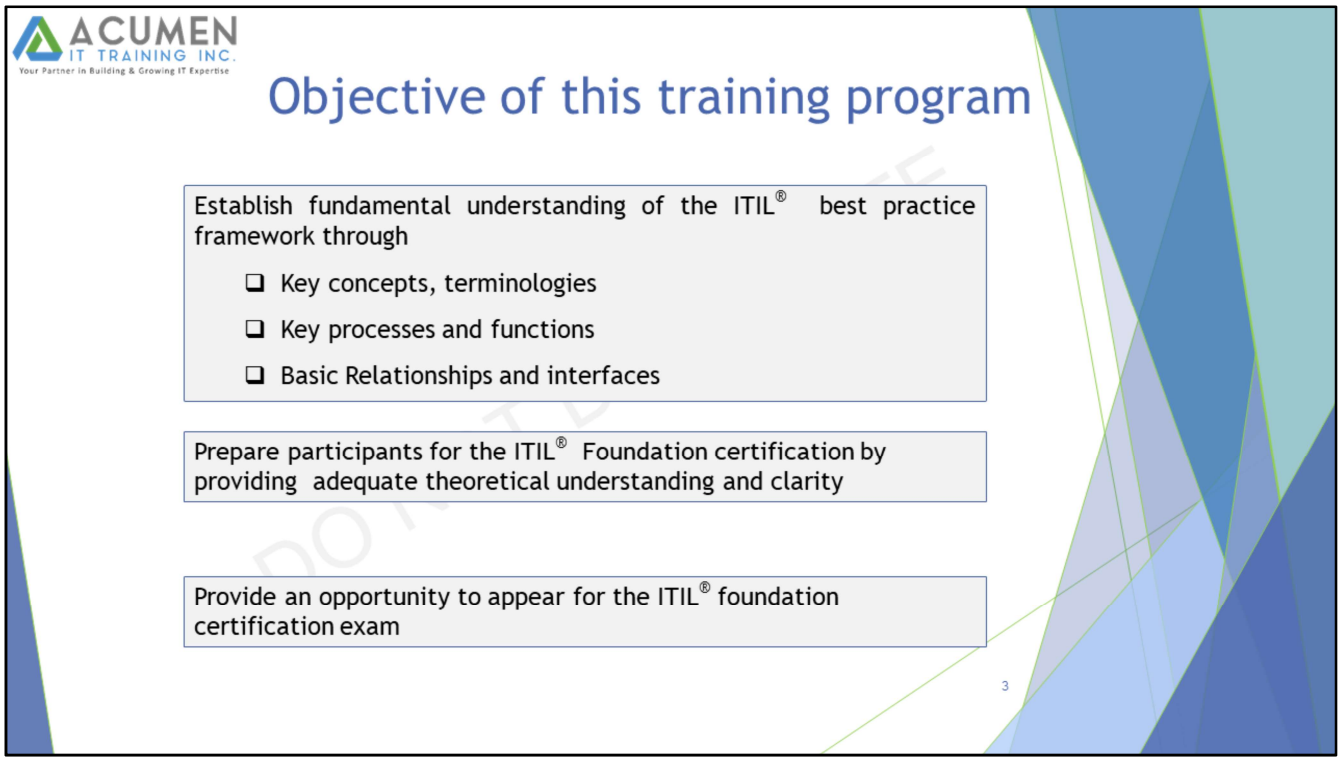


This is the ITIL® foundation program based on the official curriculum for the level of certification.

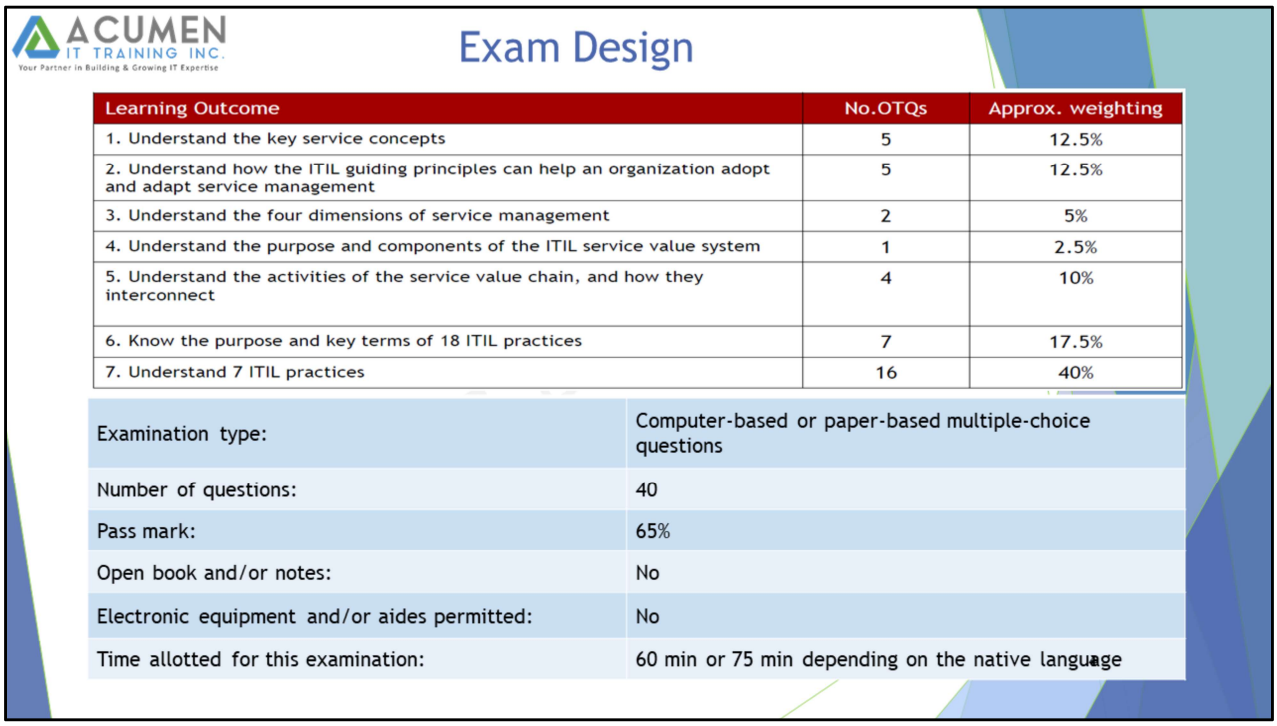
This workshop covers the syllabus required for the ITIL® foundation level as per the current version of ITIL®

Current syllabus version of ITIL 4®, refer https://www.axelos.com/certifications/itil-certifications/itil-foundation-level

Before starting, let us not forget to set the rules of the program.



Keep an eye for the "Badge" icon on some of the slides that give the Examinable Definitions and content.



3 ITIL Foundation Examination Design

3.1 Examination Administration

Duration: 60 minutes

NOTE: Candidates taking the exam in a language that is not their native or working language may be awarded 25% extra time, i.e. 75 minutes in total.

Materials permitted: This is a 'closed book' examination. No materials other than the examination materials are permitted.

3.2 Question Types

All 40 questions are Objective Test Questions (OTQs), which present four options from which one option is selected. Distractors (wrong answers) are options that candidates with incomplete knowledge or skill would be likely to choose. These are generally plausible responses relating to the syllabus area being examined.

3.3 Scoring

Number of questions: 40

Marks: Each question is worth 1 mark. There are 40 marks available.

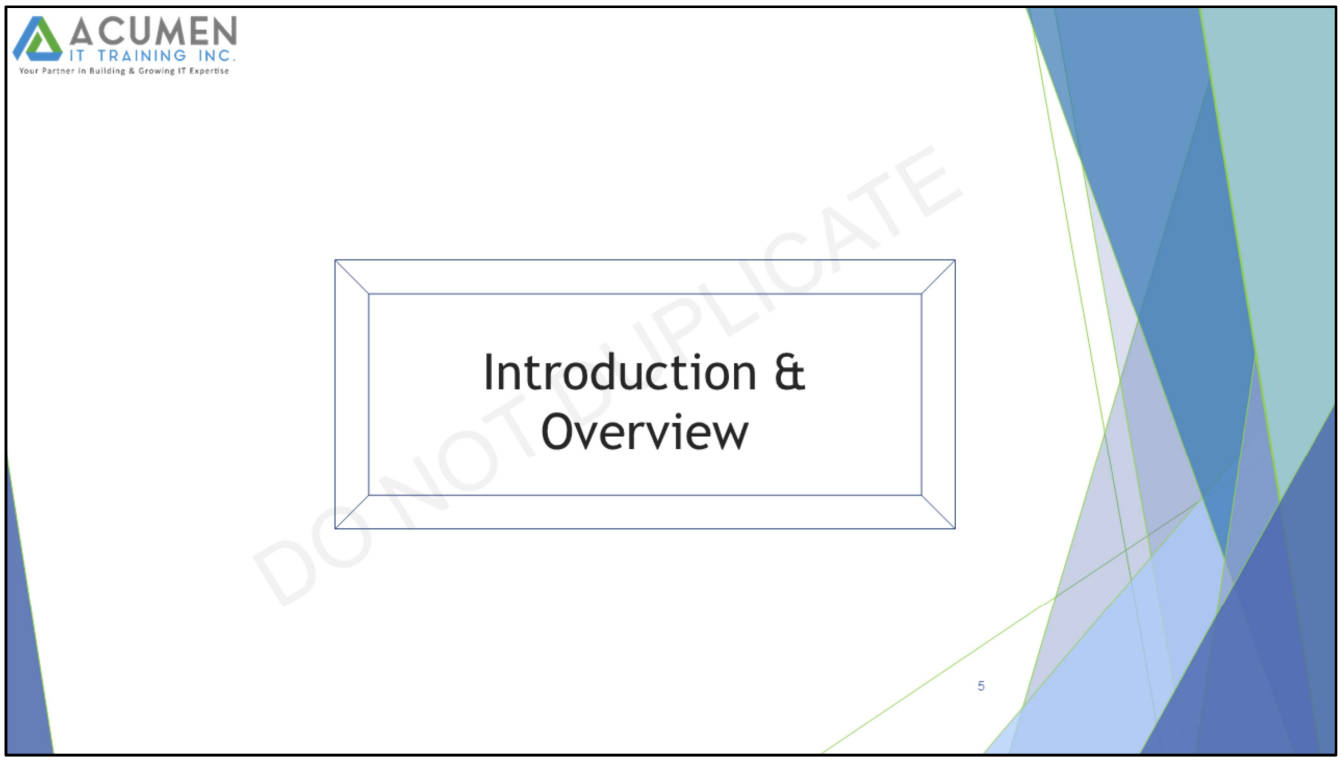
There is no negative marking.

Provisional pass mark: 65% or higher – a raw score of 26 marks or above

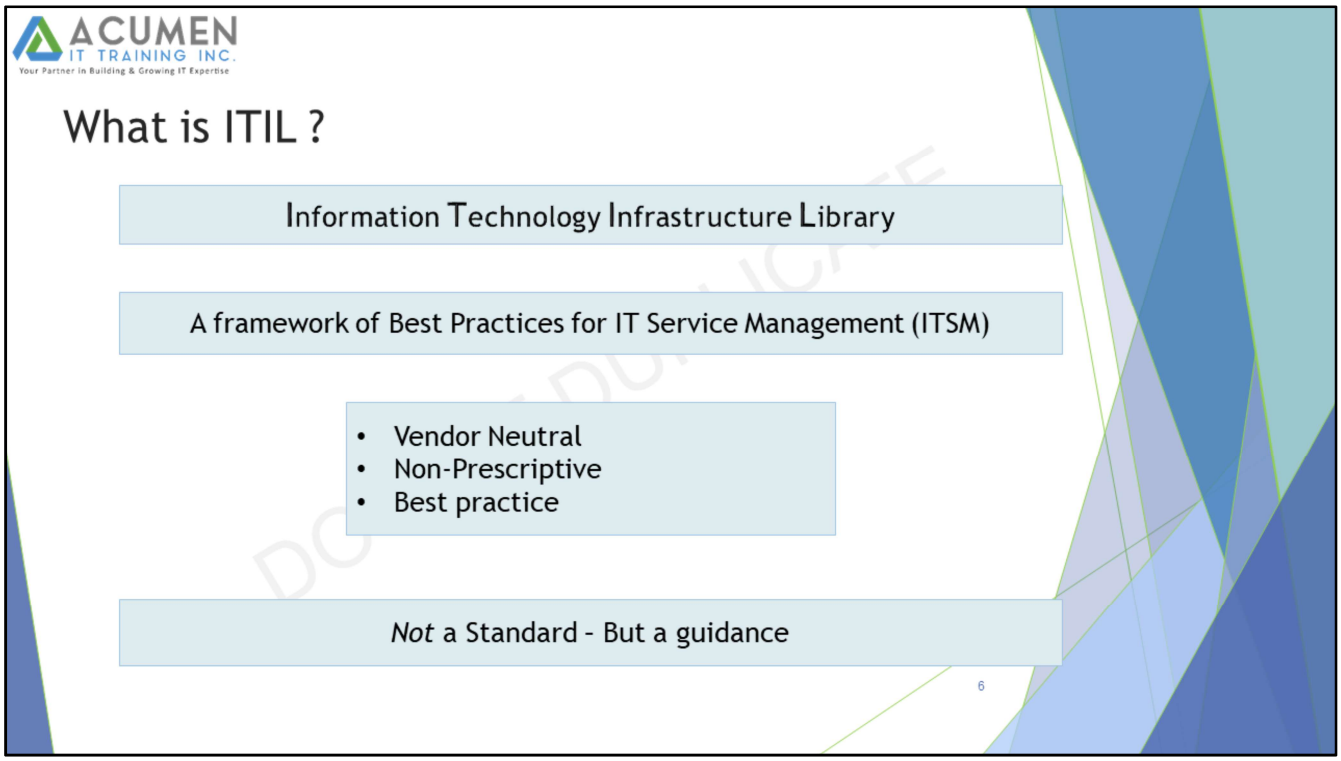
3.4 Weightings by Bloom's Level

There are 9 questions at Bloom's Level 1 = approx. 22.5%

There are 31 questions at Bloom's Level 2 = approx. 77.5%



To start with, let us have a closer look at some of the fundamental aspects of IT Service Management and ITIL®.

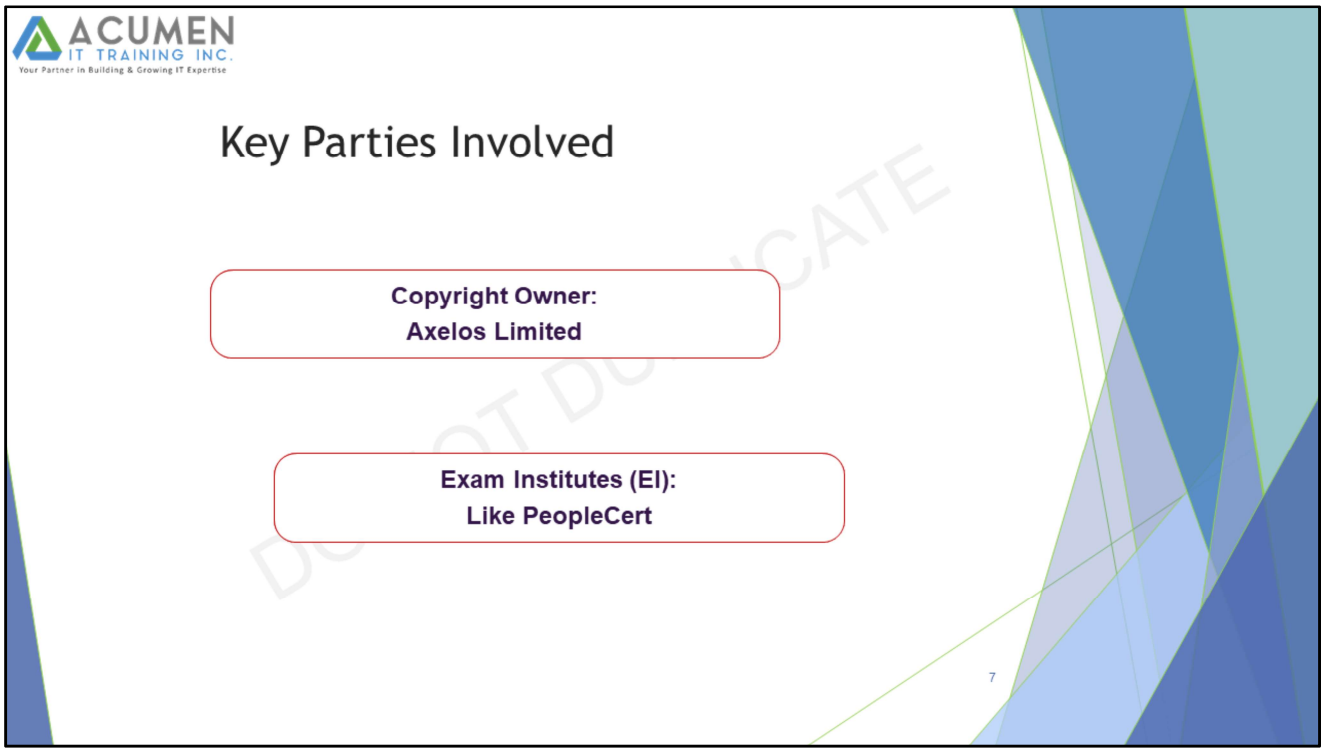


ITIL has led the ITSM industry with guidance, training, and certification programmes for more than 30 years.

ITIL 4 brings ITIL up to date by re-shaping much of the established ITSM practices in the wider context of customer experience, value streams, and digital transformation, as well as embracing new ways of working, such as Lean, Agile, and DevOps.

The success of ITIL® globally, can be attributed to the following aspects:

- The framework being 'vendor neutral'. It is **independent of any technology platform or tools**
- **Non-prescriptive approach** – extending the guidance in an adoptable and adaptable model.
- **Best practice reference** – contains learning's and thought leadership across the globe.

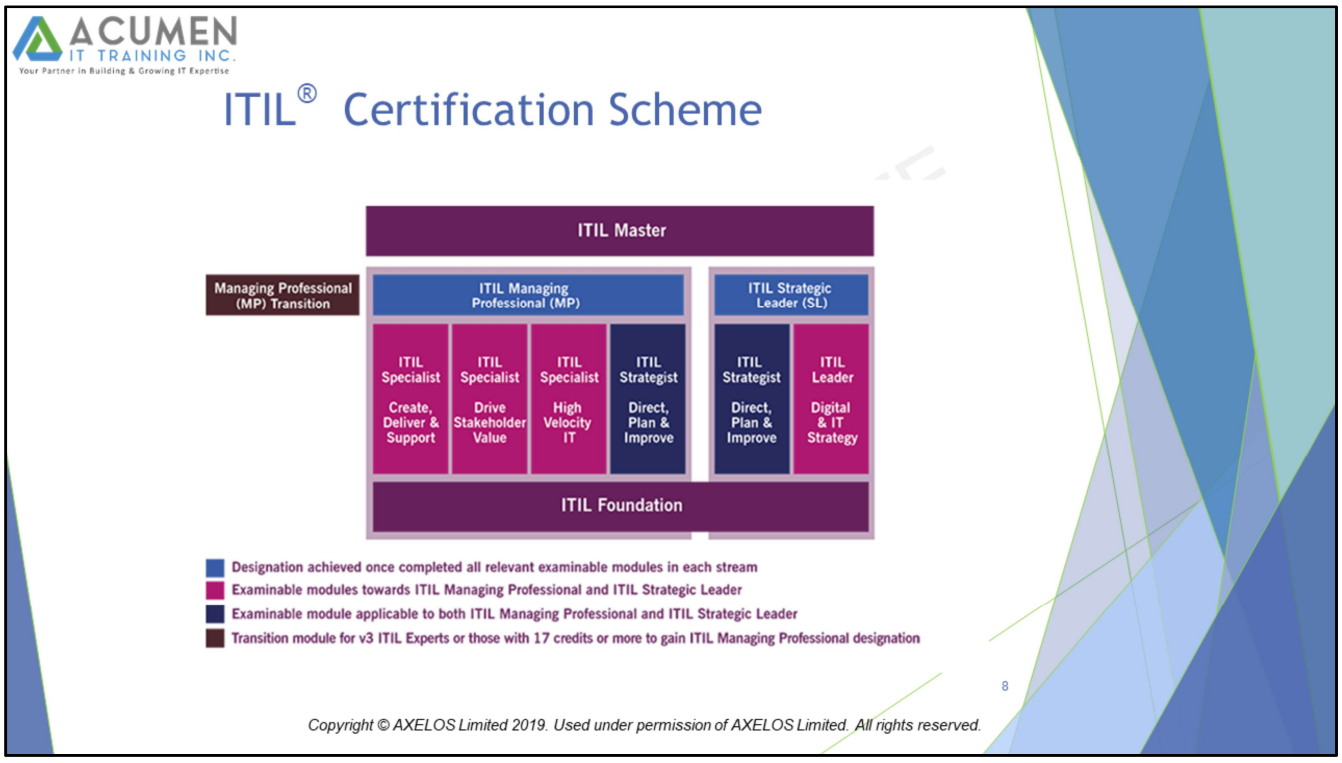


These are some of the key organizations involved with the creation, publishing , maintenance and global governance for the ITIL® best practice framework, its publications and qualification programs.

Axelos Limited: Is the official copyright owner of the ITIL® framework.

The Certification Scheme and Training framework of ITIL® is managed by PeopleCert, globally.

Accredited Training Organizations (ATOs): These organizations are accredited and authorized by Axelos and PeopleCert for delivery of quality ITIL® training programs and certification exams.



The professional qualification/certification framework also evolved along with ITIL® and has become a widely recognized and respected professional certification framework for those in the area of ITSM.

Like with the structure of the framework, the certification scheme has undergone a major make-over over different versions.

The diagram above shows the Certification scheme as per ITIL® 4.

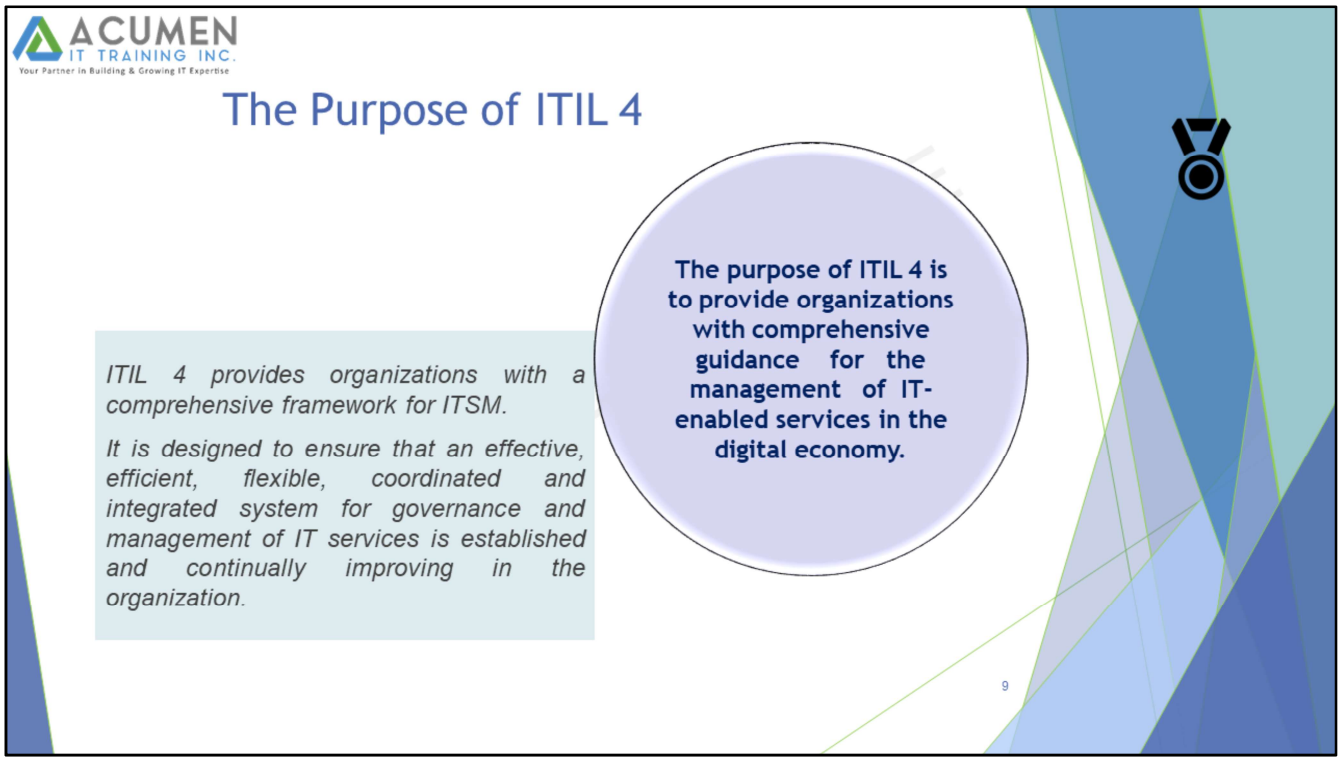
The Basic Level of training and certification is known as ITIL® Foundation

In all, there are four certification levels within the ITIL 4 scheme:

- **Foundation**
- **Managing Professional**
- **Strategic Leader**
- **Master**

You can get all the updated details of the certification scheme and other official ITIL® information on the site:

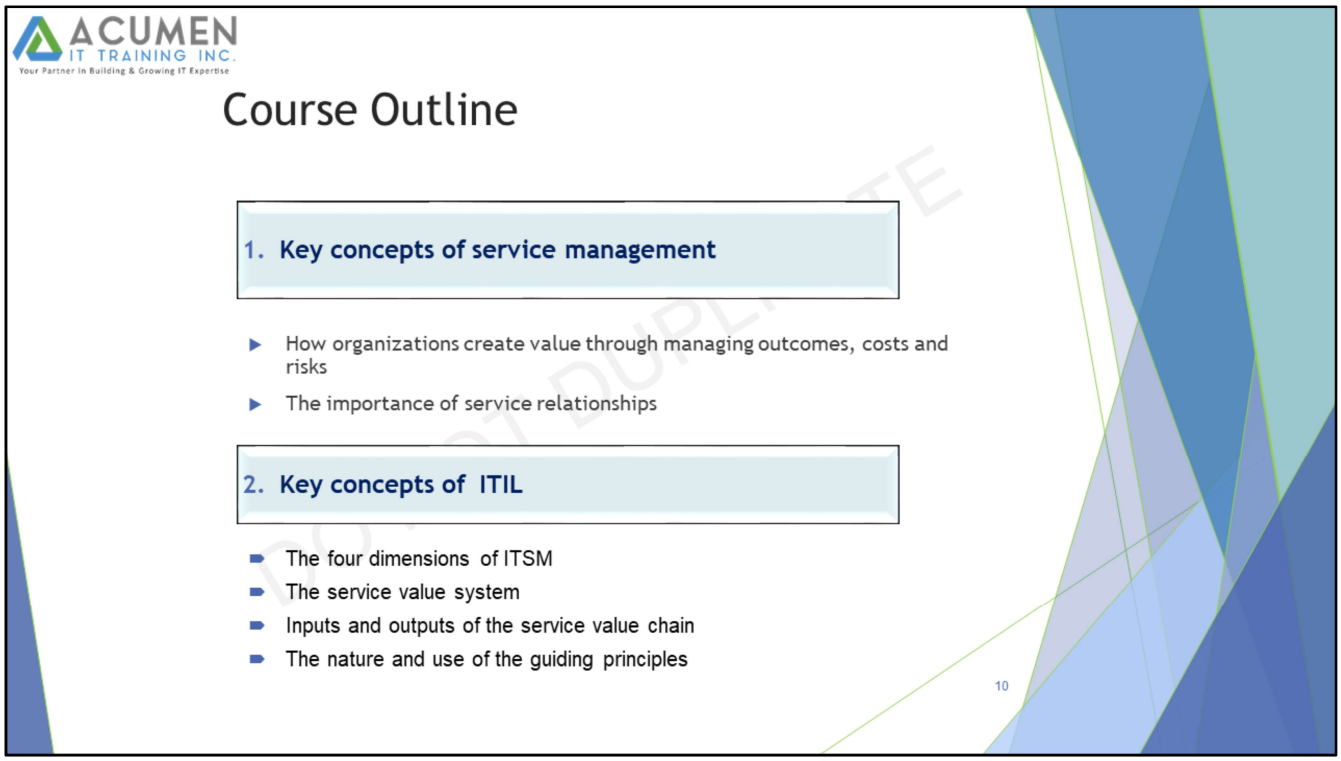
https://www.axelos.com/certifications/itil-certifications



The ITIL Best Practice framework provides a common language and tools that power collaboration within IT teams, to deliver value across a business.

ITIL guidance can help individuals and organizations use IT to realize business change, transformation and growth.

The purpose of ITIL 4 is to provide organizations with comprehensive guidance for the management of IT-enabled services in the digital economy



The overall contents of this course is outlined here and in next page.

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Your Partner in Building & Growing IT Expertise

Course Outline – Contd.

3. Introduction to the ITIL practices

- Definition of the key terms related to the ITIL practices
- Purposes of 18 (examined) ITIL practices
- Further detail related to:
  - Continual Improvement
  - Change control
  - Incident management
  - Problem management
  - Service Desk
  - Service level management
  - Service request management

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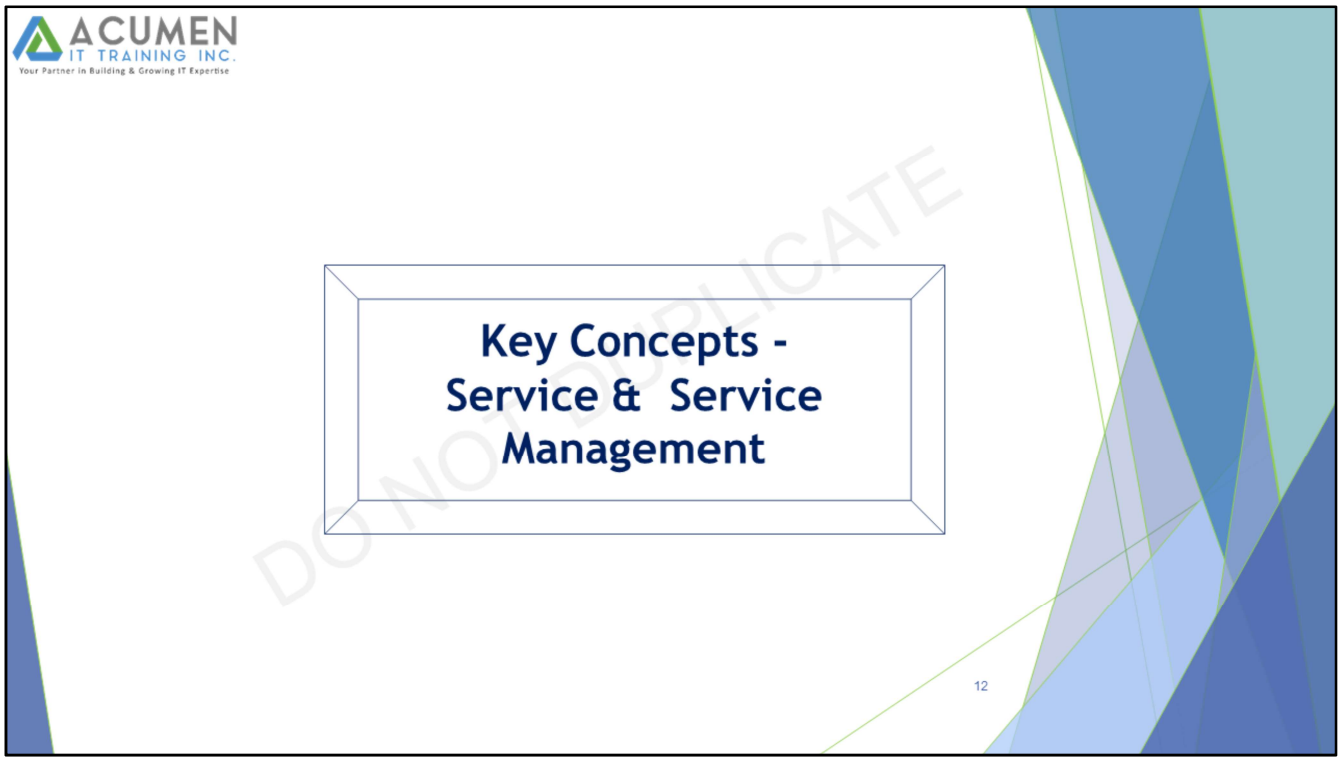
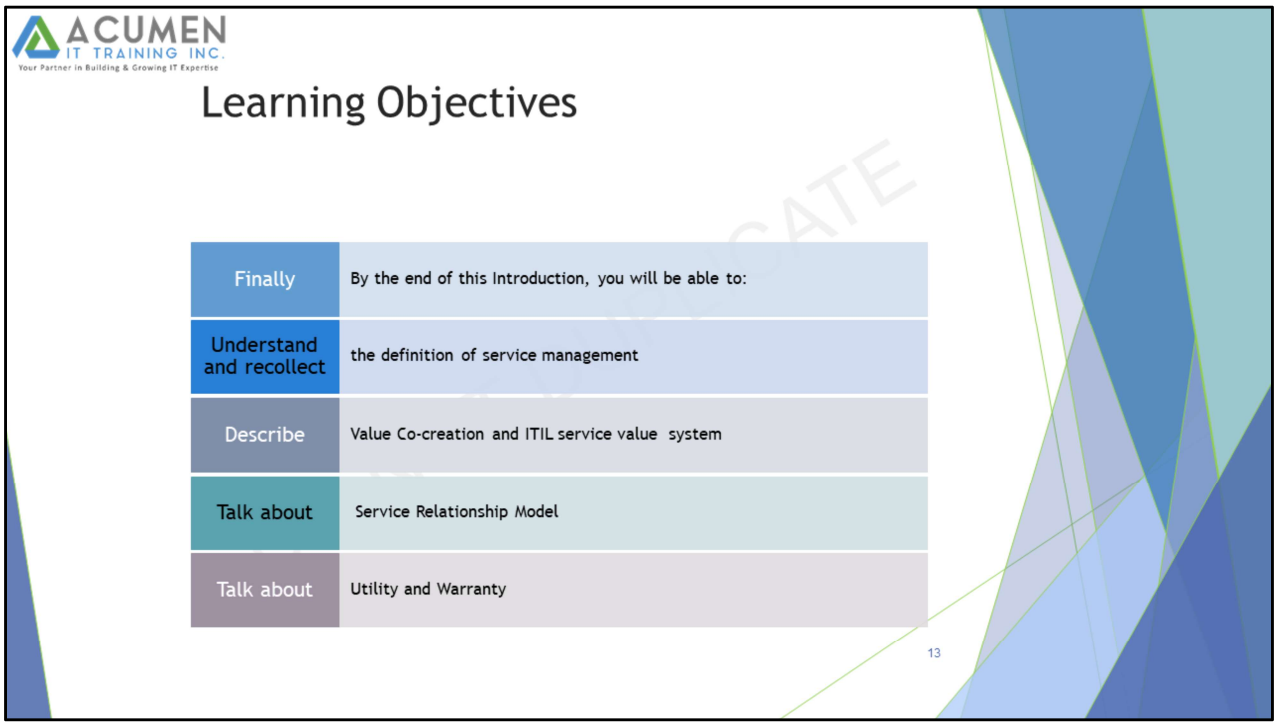
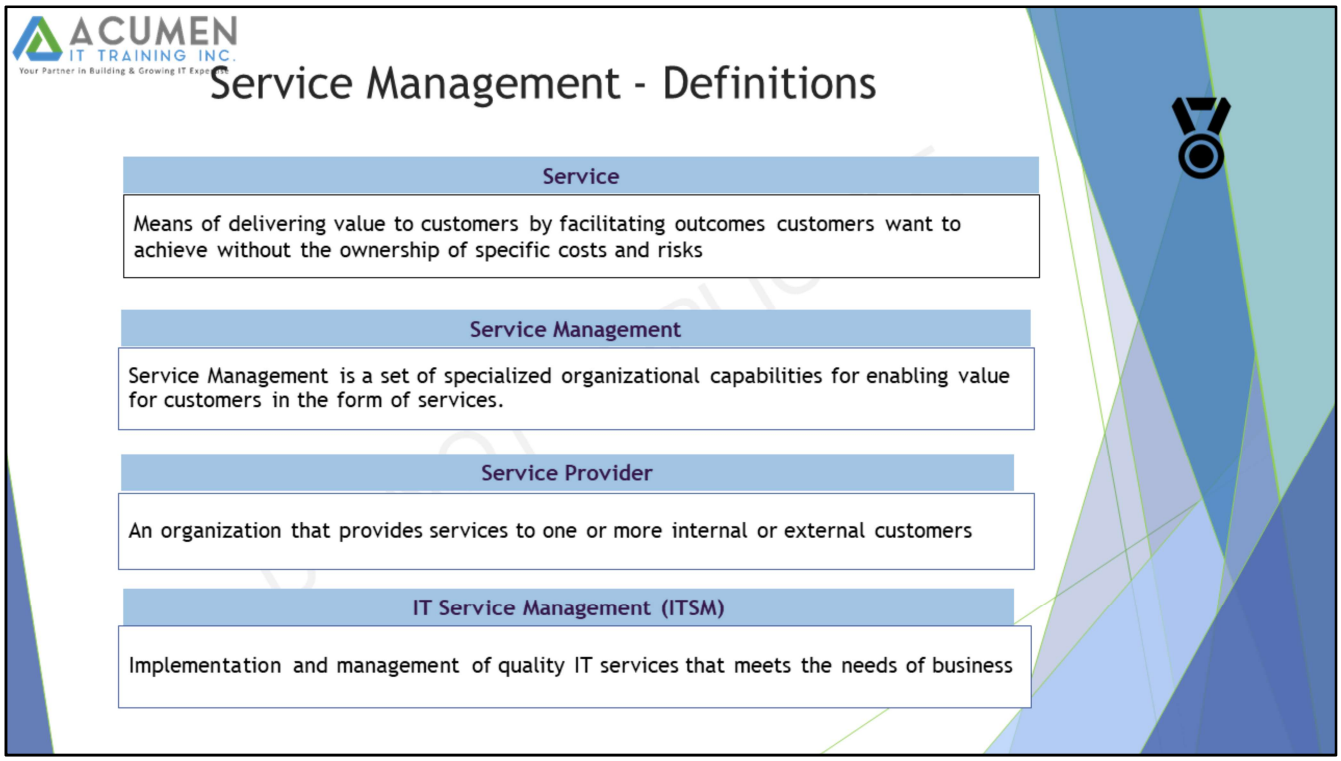


Service Management has its origin in the traditional service industry like banking, hotel, airline etc.. With the adoption of a service approach towards managing IT infrastructure, the concept of Service Management has grown within the IT industry as well. The outsourcing of IT services by organizations globally has resulted in the need for Service Providers with efficient management capabilities. Even the internal IT is required to adopt a Service Provider perspective with various units within the organization as a customer. All of this has further enhanced the practice of service management in the IT industry.

Let us understand ITIL framework in context of ITSM.





Service management is defined as a set of specialized organizational capabilities for enabling value in the form of services. Service Provider uses resources and these specialized organizational capabilities to deliver services that facilitate outcomes for customer.
It is also a professional practice supported by an extensive body of knowledge, experience and skills.

A service provider is one who provide Services to the customers. These customers can be internal, external or both.

When the Services delivered are related to Information Technology (IT), then the service management scenario is that of IT Service Management (ITSM). The Service Provider in this case is IT Service Provider.

Every IT organization should act as a service provider, using the principles of service management to ensure that they deliver the outcomes required by their customers.

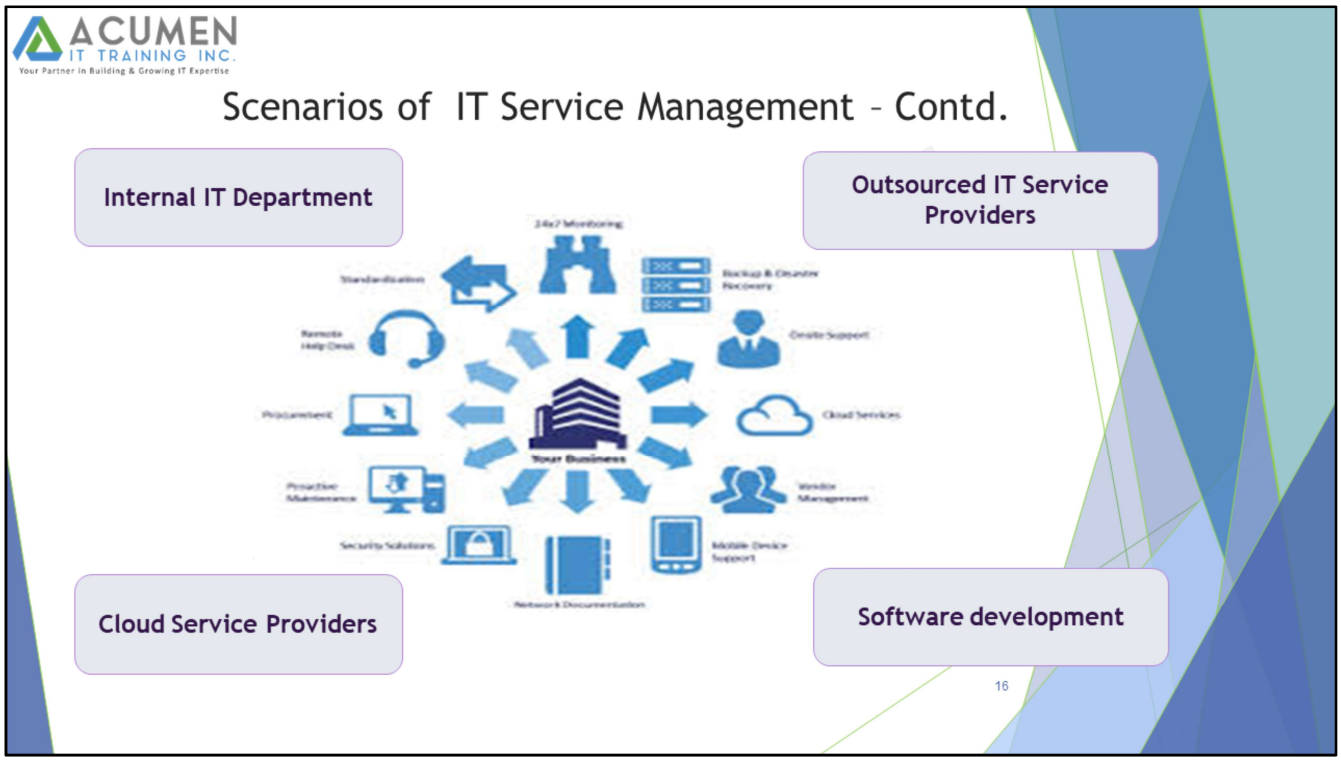
A few examples of generic Service Providers are given above. These are not specific to IT Services.

A. Mobile Service Providers:
Here various communication related Services are offered and provided by Mobile Service Providers to their consumers. This can include Voice Services, Data Services, Value-added Services and so on.

B. Banking Service Providers (Banks):
Here various financial and banking related Services are offered and provided, such as various bank accounts (savings, Current), Deposits, Loans, Credit Cards etc..

C. Training Services:
Here various Trainings are offered and provided in the domains/areas (technical, non-technical) in scope of the providers. These trainings could be offered as class room trainings, Online trainings, E-learning etc..

D. Hotel Services (Lodging):
Here various lodging and boarding related services are offered, including various types of rooms, room Service, Banquet halls, Restaurants, Laundry services, Travel desk etc..



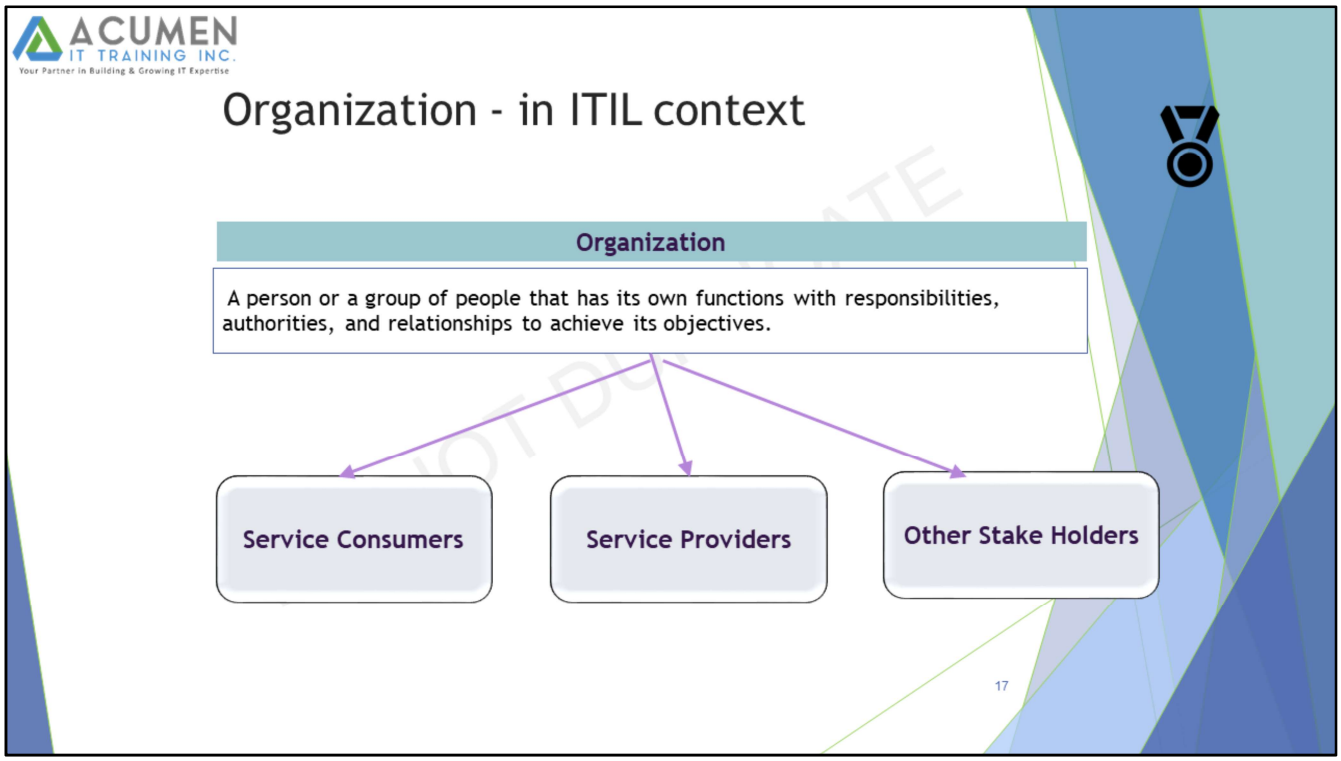
Now, let us look at a few examples of IT Service Providers and IT Service Management Scenarios.

A. Internal IT Departments:
These internal functions offer IT Services such as Desktops/Laptops, Email, Storage, Network, Internet, Applications etc.. to their business customers and users.

B. External IT Service Providers
These are the third party Service providers who provide either specific IT Services to the business customers and users or manage the Corporate IT services based on a outsourcing agreement/contract.

C. Cloud Service Providers:
These providers offer various Cloud based IT Services in IaaS, PaaS, SaaS models.

D. Software Development :
These are third party providers who offer Software development and related services to various organizations and customers.

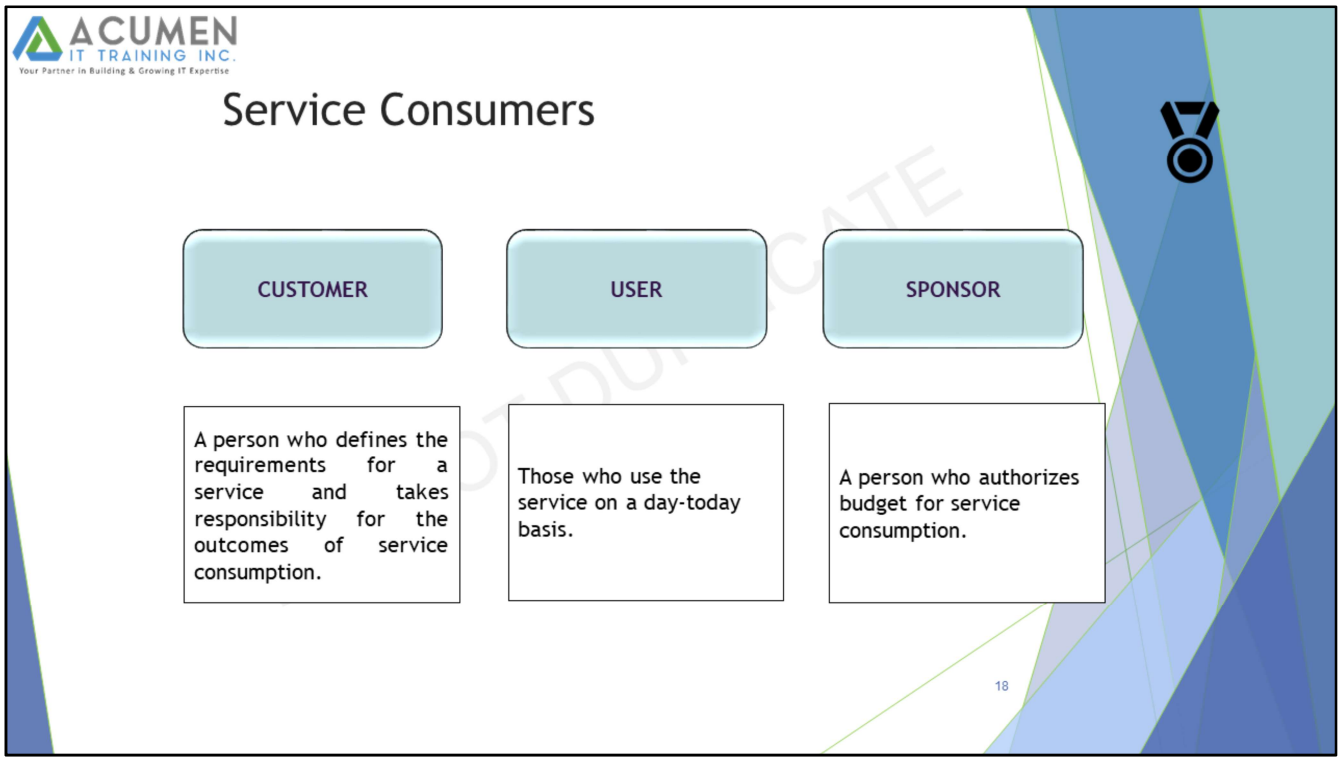


Organizations vary in size and complexity, and in their relation to legal entities – from a single person or a team, to a complex network of legal entities united by common objectives, relationships and authorities.

Broadly, ITIL classifies the Organizations into three categories, as shown here:

- **Service Consumers**
- **Service Providers and**
- **Other stake holders.**

These categories are further elaborated in later sections.



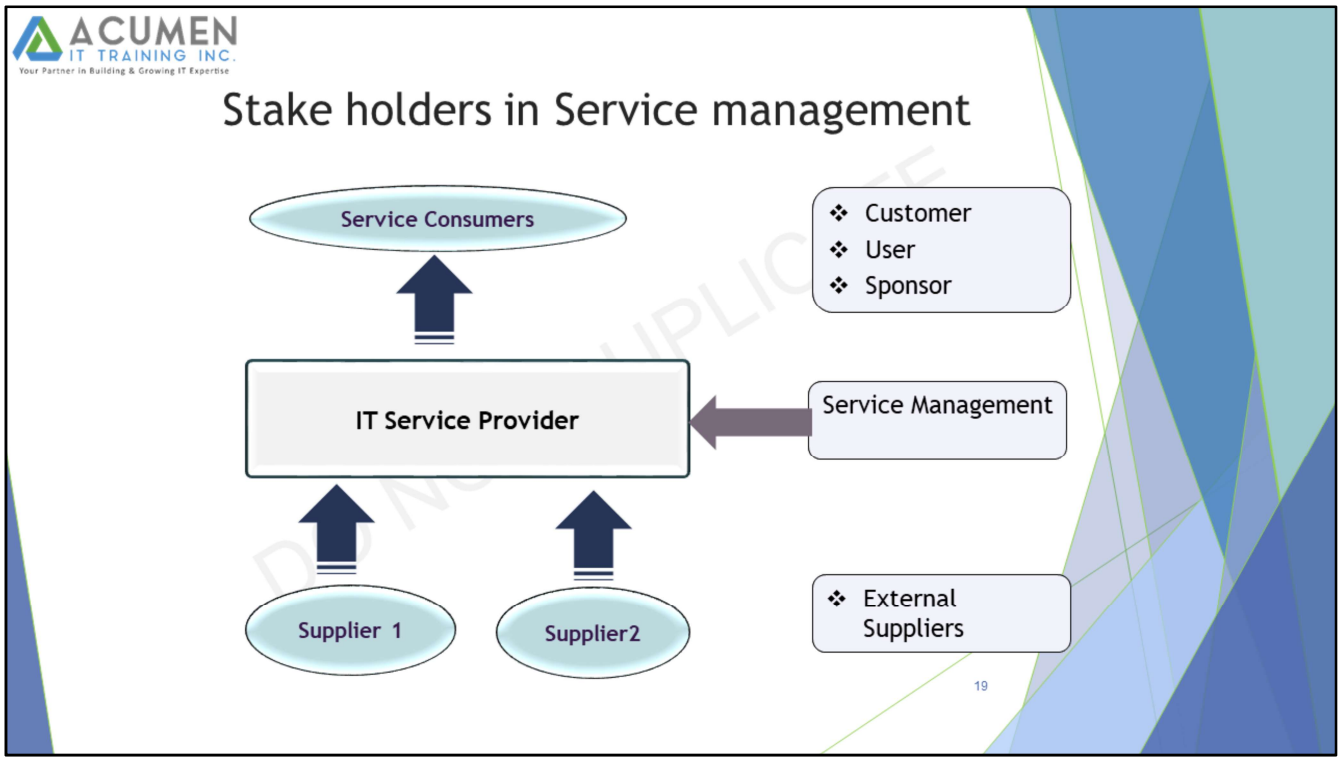
When receiving services, an organization takes on the role of the service consumer.

Service consumer is a generic role that is used to simplify the definition and description of the structure of service relationships.

In practice, there are more specific roles involved in service consumption, such as **customers, users, and sponsors. These roles can be separate or combined.**

The customer of an IT service provider is the person or group who defines and agrees the service level targets.

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

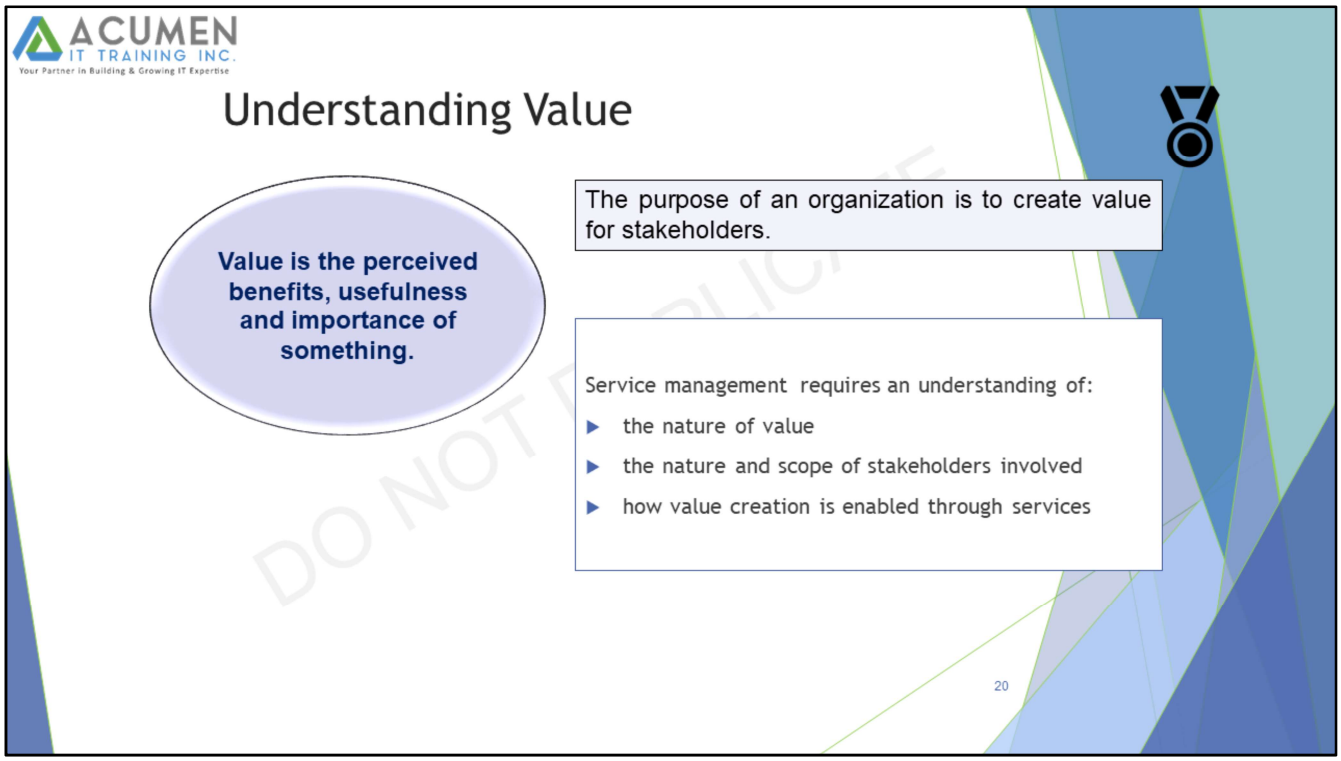


Three key categories of Organizations that are most important in a Service management context are shown above.

Within the service provider organization there are many different stakeholders including the functions, groups and teams that deliver the Services, as well as management, directors, investors, shareholders.

There are also many stakeholders external to the service provider organization : Customers , Users , Sponsors, Suppliers are some of the key stakeholders.

Suppliers are third party organizations responsible for supplying goods/products and/or services that are required to deliver IT services, to the Service Provider organization.
Examples of suppliers include commodity hardware and software vendors, network and telecom providers, and outsourcing organizations.



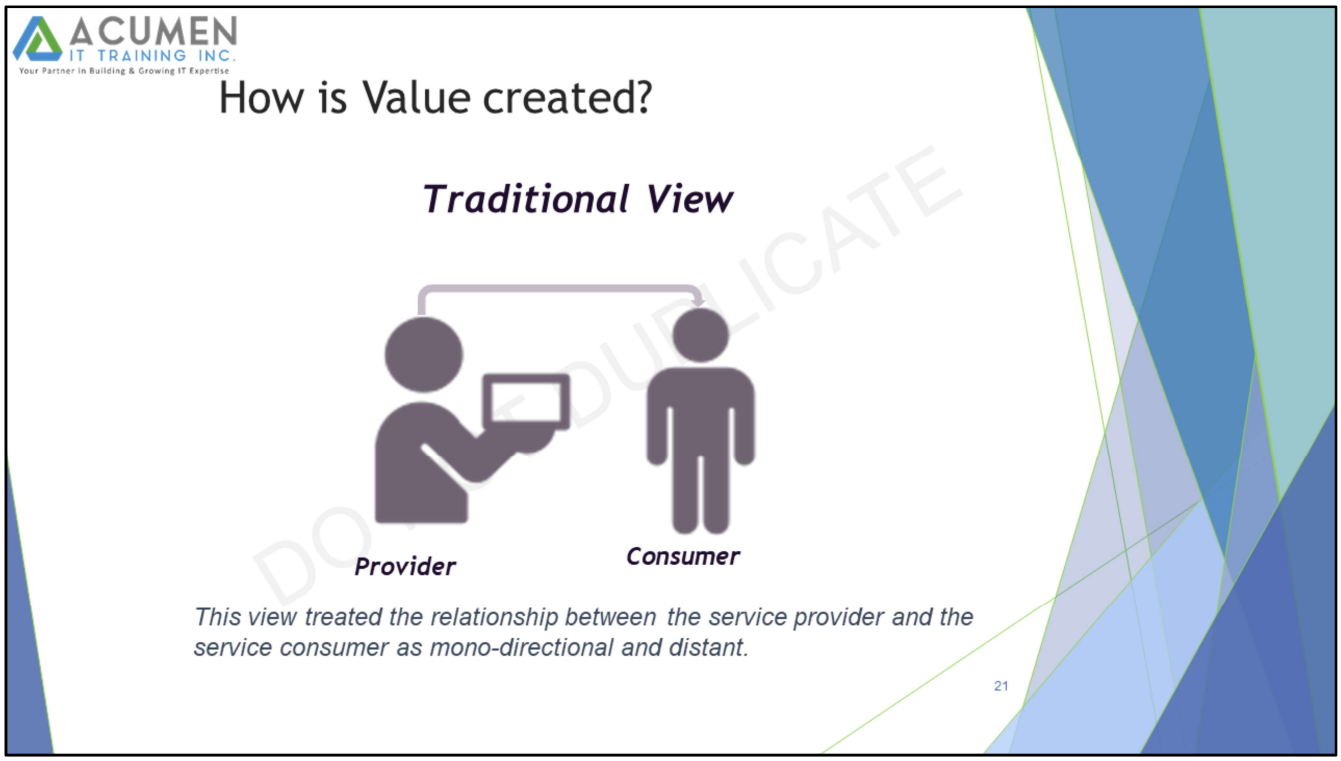
Value can come in many forms, such as increased productivity, reduced negative impact, reduced costs, the ability to pursue new markets, or a better competitive position.

Value for the service consumer:

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

Value is subjective. What customer perceives as the value of a service is often different from what service provider thinks they are providing.

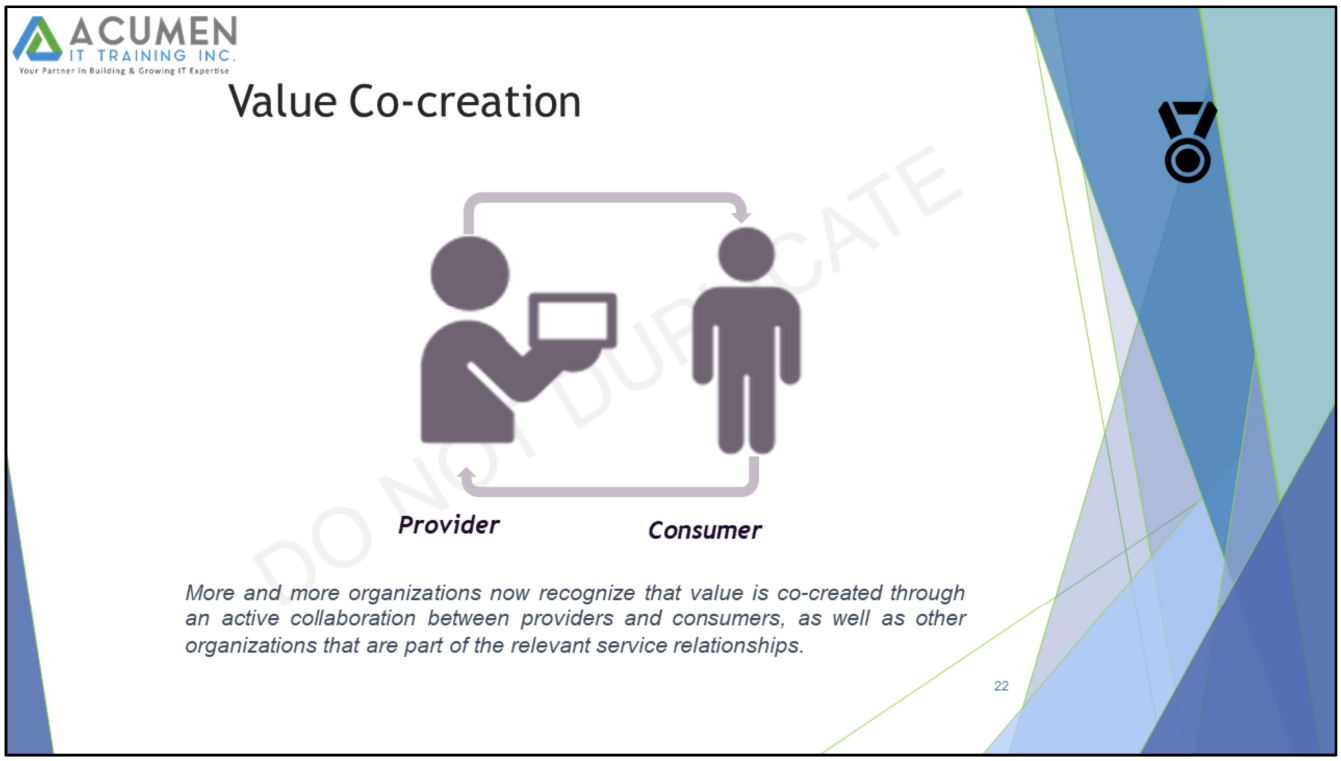
Hence Providers should no longer attempt to work in isolation to define what will be of value to their customers and users, but actively seek to establish mutually beneficial, interactive relationships with their consumers.



There was a time when organizations saw their role as delivering value to their customer in much the way that a package is delivered to a building by a delivery company.

This view treated the relationship between the service provider and the service consumer as **mono-directional and distant.** The provider delivers the service and the consumer receives value; the consumer plays no role in the creation of value for themselves.

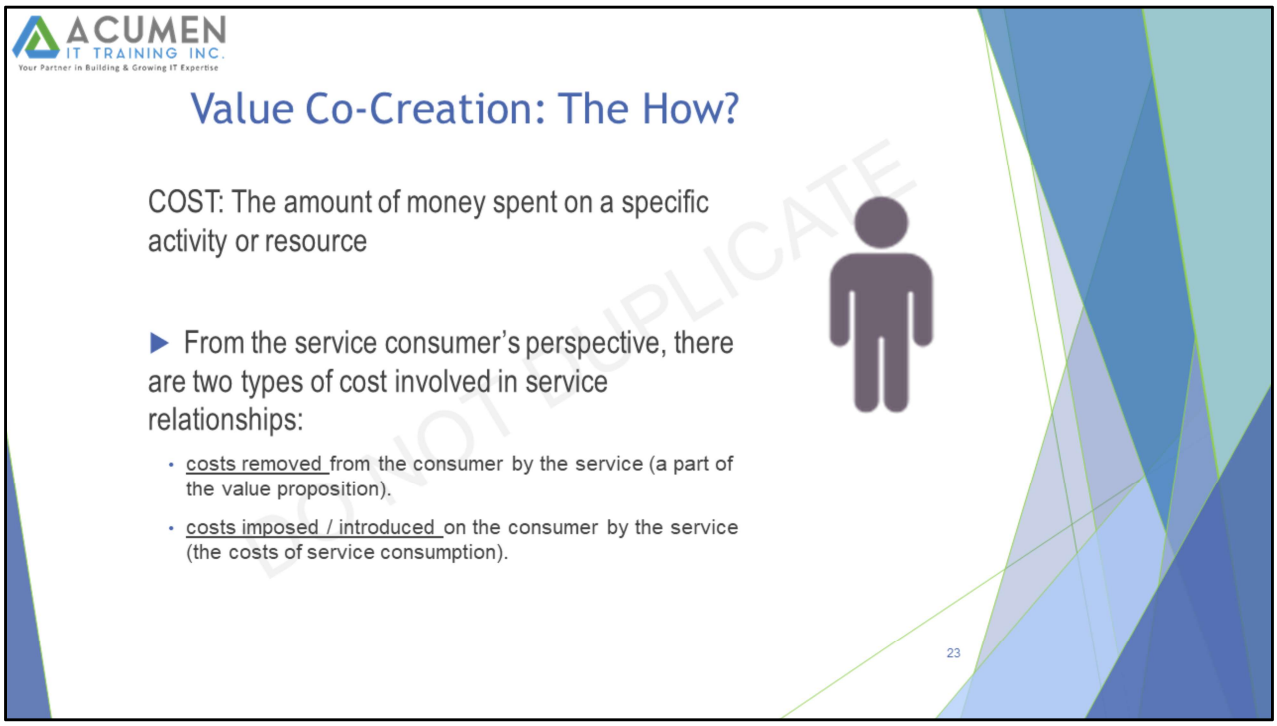
This fails to take into consideration the highly complex and interdependent service relationships that exist in reality.



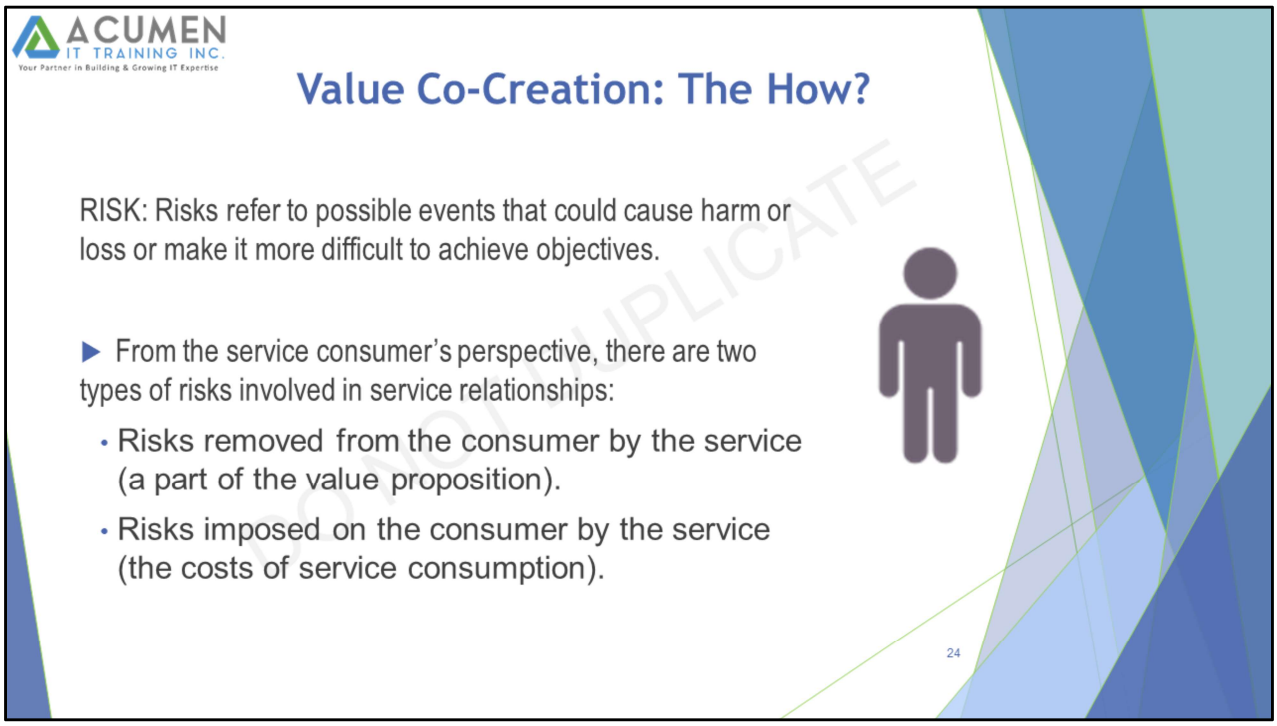
In the current service delivery paradigm there are complex relationships among stakeholders and there has to be better management application for value co-creation.

Service Provider organizations should no longer attempt to work in isolation to define what will be of value to their customers and users, but actively seek to establish mutually beneficial, interactive relationships with their consumers.

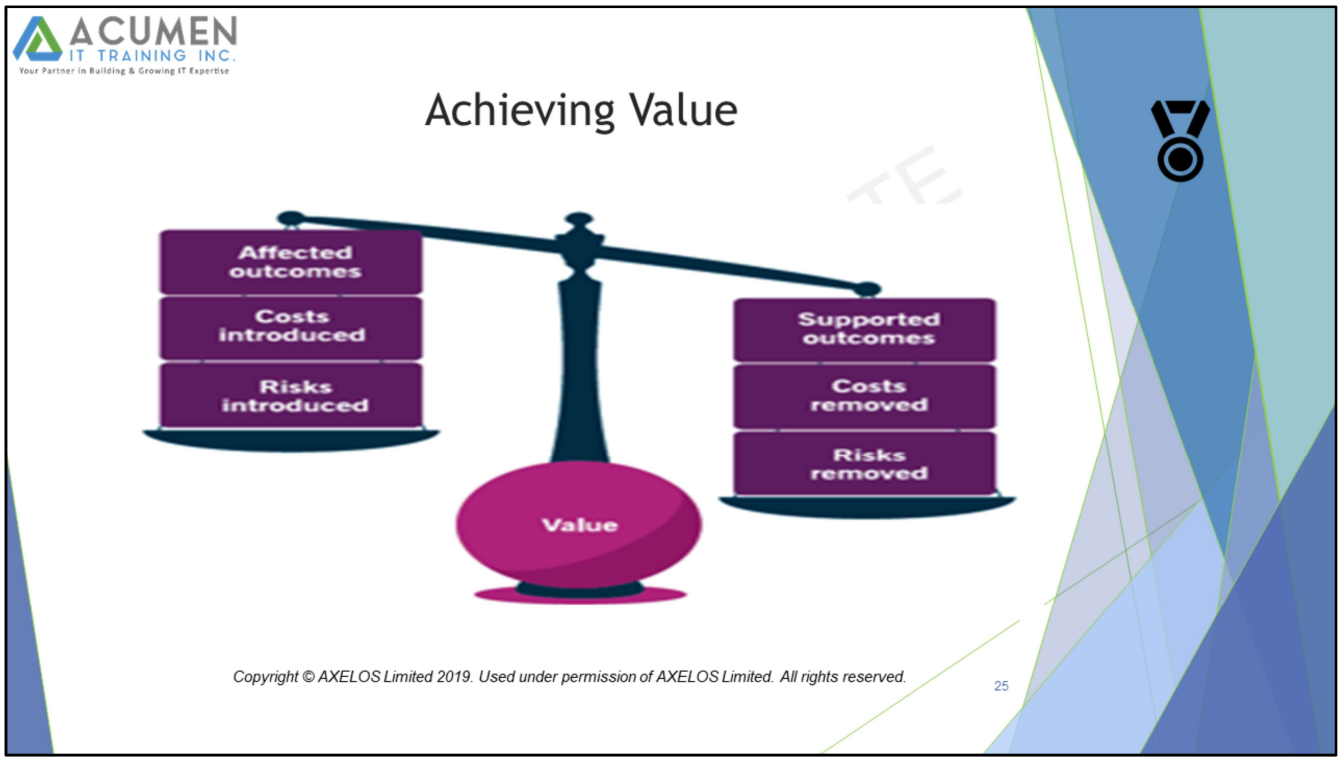
Stakeholders across the service value chain contribute to the definition of requirements, the design of service solutions and even to the service creation and/or provisioning itself.



Costs Removed: Costs of skilled personnel, space, technology etc. that the consumer need not have to bear
Costs Imposed: Price charged by the service provider, procurement and negotiation costs, staff training, program management costs to maintain service provider



Risks Removed: These can include service consumers lack of staff availability or lack of knowledge of the product etc.
Risks Imposed: Dependency on an external party, privacy issues at the provider among others



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 risks and costs. On the other hand, service relationships can introduce new risks and costs, and in some cases, can negatively affect some of the intended outcomes, while supporting others.

Cost: The amount of money spent on a specific activity or resource.

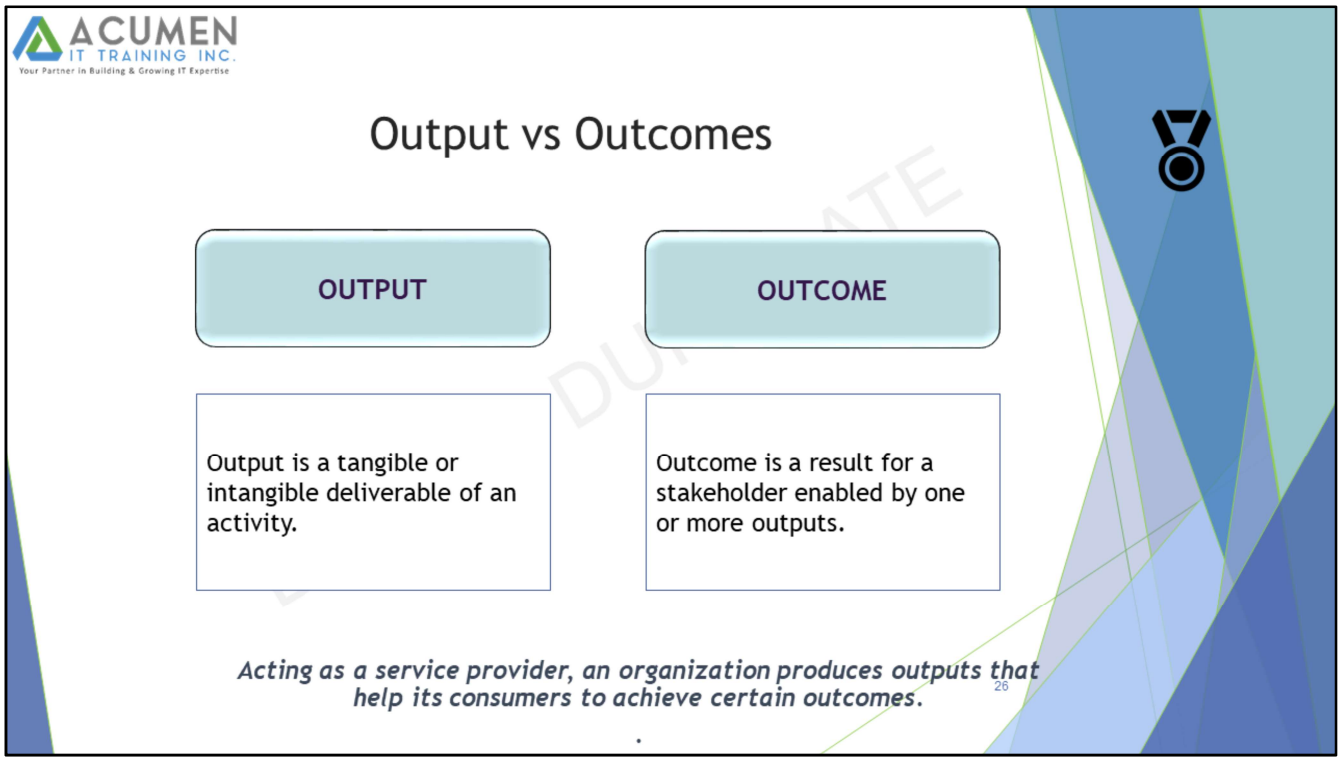
From the service consumer's perspective, there are two types of cost involved in service relationships:

- **costs removed from the consumer by the service (a part of the value proposition).**
- **costs imposed on the consumer by the service (the costs of service consumption).**

Risks: **Risks refer to possible events that could cause harm or loss, or make it more difficult to achieve objectives.**

Value, Outcomes, Costs and Risks (VOCR) **should be gauged from the perspective of the service consumer.**

Service Providers need to ensure that services are delivered within budget constraints and meet the financial expectations of the organization

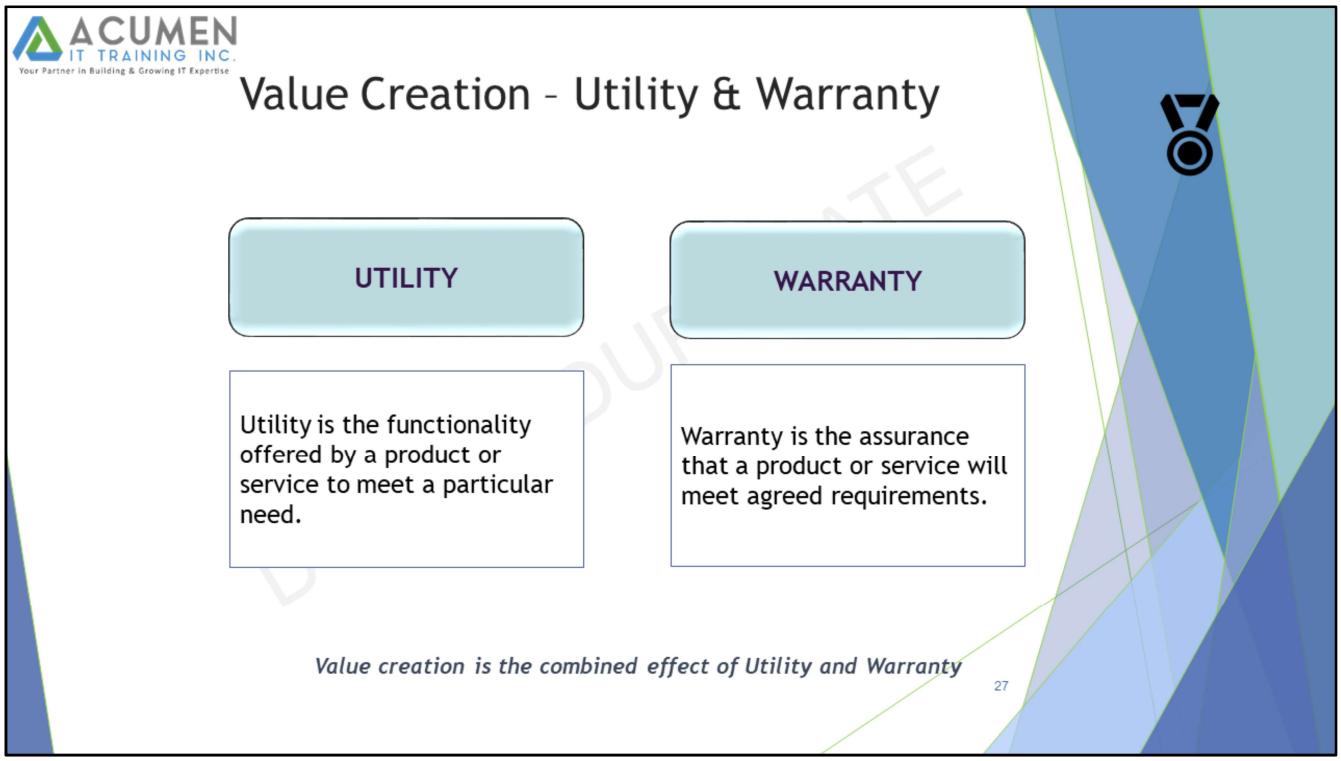


It is important to note that it is Outcome (not output) which is considered here.
Acting as a service provider, an organization produces outputs that help its consumers to achieve certain outcomes.

Output vs. Outcome:
Output: A tangible or intangible deliverable of an activity.
Outcome: A result for a stakeholder enabled by one or more outputs.

For example, a restaurant may serve a soft drink to a customer. Here, the soft drink itself is an output. But it serves an outcome and deliver value only if it meets the expectations and preferences of the customer and quenches his thirst (or any other need) effectively.

Taking another 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.



To evaluate whether a service or service offering will facilitate the outcomes desired by the consumers and therefore create value for them, the overall utility and warranty of the service should be assessed.

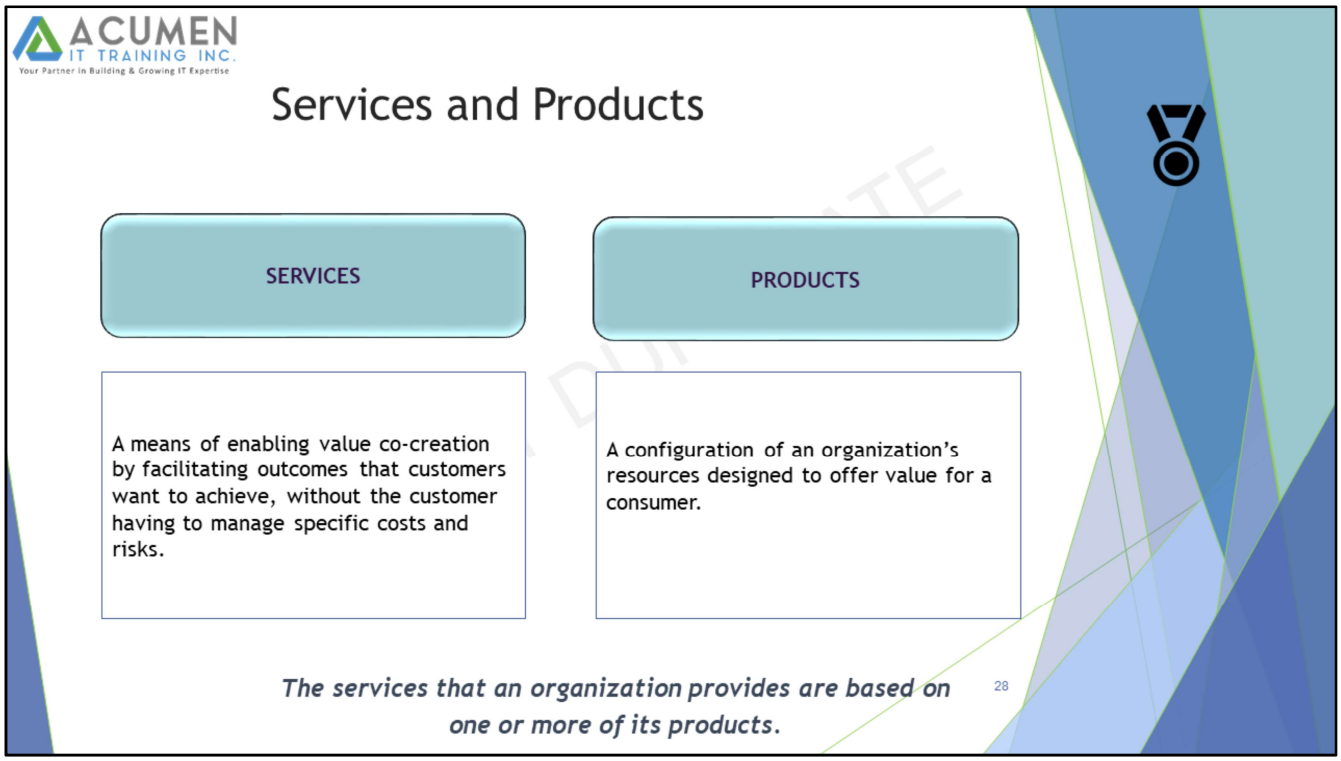
The value of the service is often linked to how much it meets the customer's expectations. It is not determined by the provider, but by the recipient. From the customer's perspective, the value consists of meeting the business objectives. **The value of a service is created by two elements of the service : Utility and Warranty. Both these elements work together to create value.**

***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'.** To have utility, a service must either support the performance of the consumer or remove constraints from the consumer. Many services do both. Utility defines whether the service satisfies the basic need of the customer.

***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'.** Warranty often relates to service levels **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.

Both utility and warranty are essential for a service to facilitate its desired outcomes and therefore help create value.

For example, a recreational theme park may offer many exciting rides designed to deliver thrilling experiences for park visitors (utility), but if a significant number of the rides are frequently unavailable due to mechanical difficulties, the park is not fulfilling the warranty (it is not fit for use) and the consumers will not receive their expected value.
Likewise, if the rides are always up and running during advertised hours, but they do not have features that provide the levels of excitement expected by visitors, the utility is not fulfilled, even though the warranty is sufficient. Again, consumers would not receive the expected value.

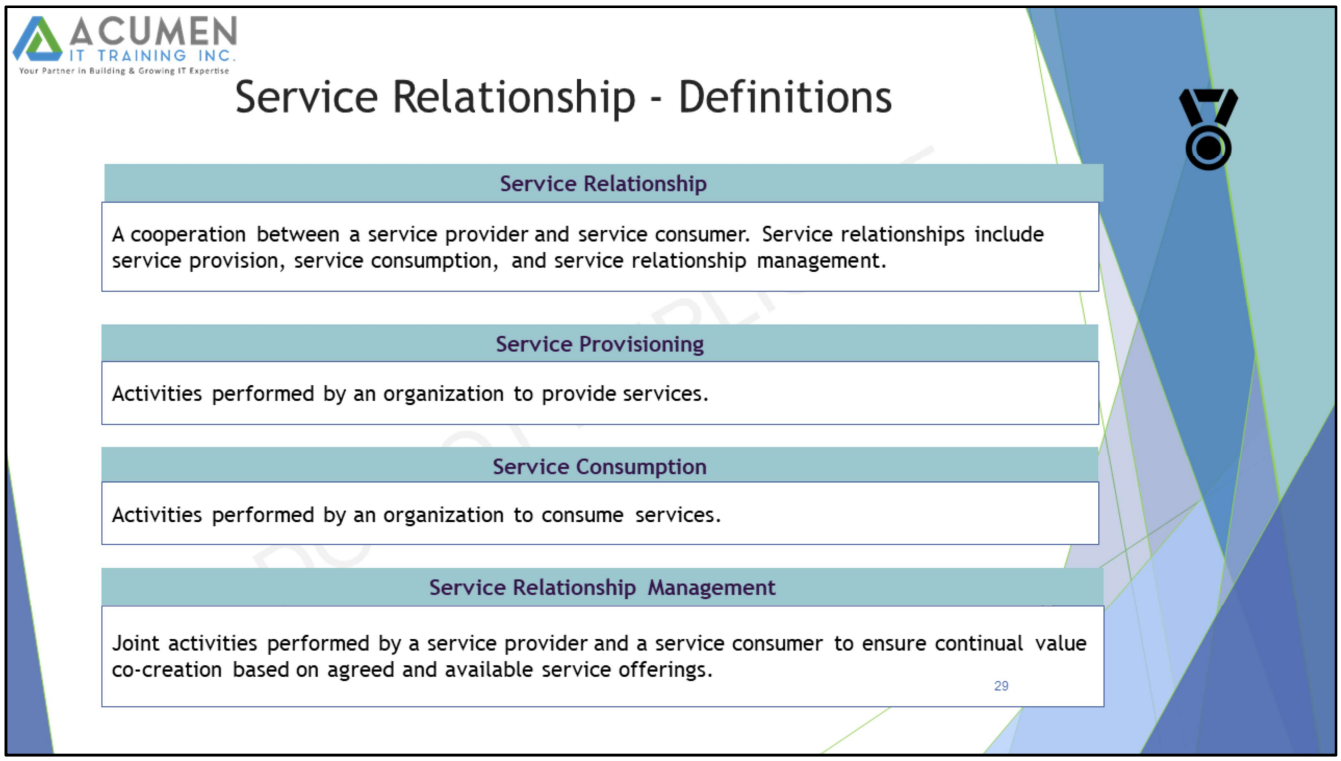


The services that an organization provides are based on one or more of its products.
Organizations own or have access to a variety of resources, including people, information and technology, value streams and processes, and suppliers and partners. Products are configurations of these resources, created by the organization, that will potentially be valuable for its customers.

Each product that an organization offers is created with a number of target consumer groups in mind, and the products will be tailored to appeal to, and meet the needs of, these groups.

Products are typically complex and are not fully visible to the consumer. The portion of a product that the consumer actually sees does not always represent all of the components that comprise the product and support its delivery. Organizations define which product components their consumers see, and tailor them to suit their target consumer groups.

For example, a core banking application is a *product* that the Bank as a Provider owns. However, the core banking application itself is not offered to the consumers, but based on this application (along with other products and resources) multiple banking services are offered to the consumers.



Service provision Activities performed by an organization to provide services.
Service provision 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.

Service provision may also include the supplying of goods.

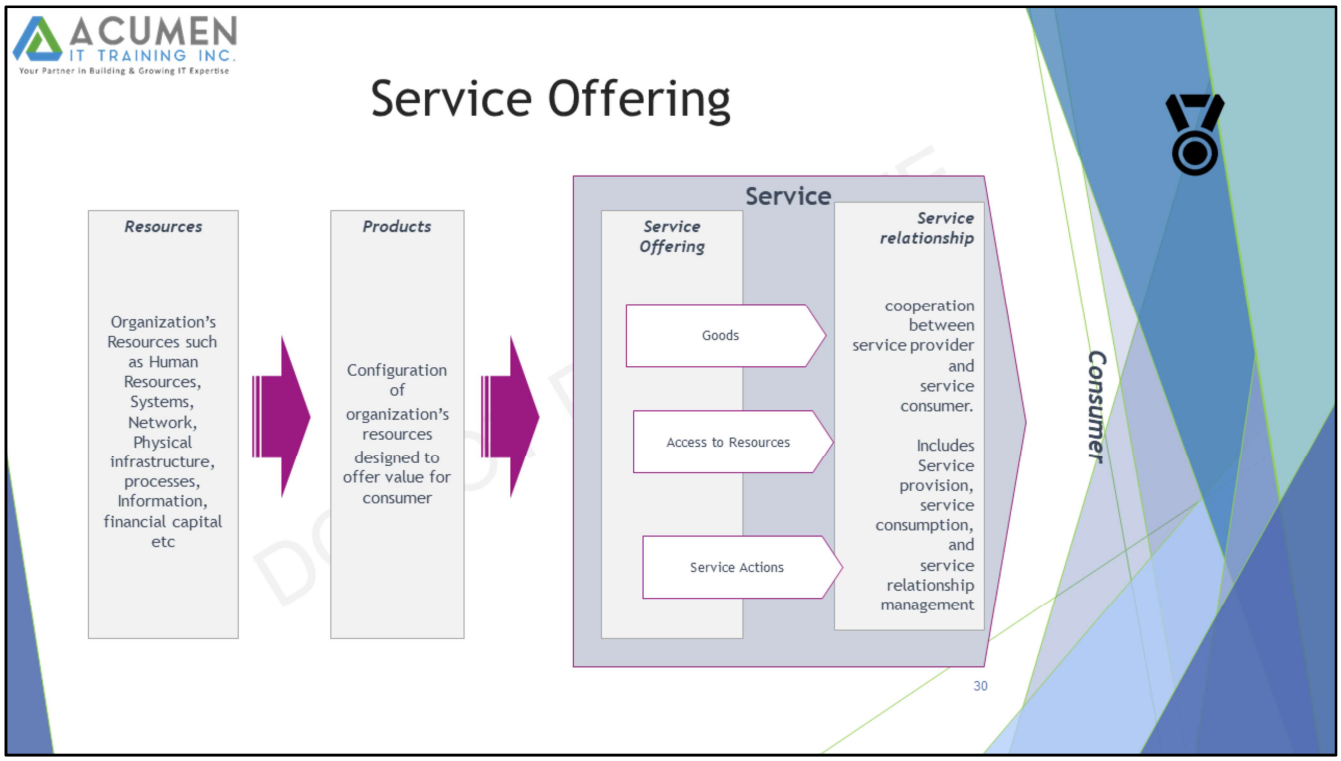
Service consumption Activities performed by an organization to consume services.
Service consumption includes:

- Management of the consumer's resources needed to use the service
- Service actions performed by users, including utilizing the provider's resources, and requesting service actions to be fulfilled.

Service consumption may also include the receiving (acquiring) of goods.

When provisioning services, an organization takes on the role of the service provider. The provider can be external to the consumer's organization, or they can both be part of the same organization.
A provider could be selling services on the open market to other businesses, to individual consumers, or it could be part of a service alliance, collaborating to provide services to consumer organizations.

The key is that the organization in the provider role has a clear understanding of who its consumers are in a given situation and who the other stakeholders are in the associated service relationships.



Products and services create value for stakeholders in many ways. Some are quite direct such as the generation of revenue, while others are more indirect such as employee experience.

Service providers present their services to consumers in the form of service offerings, which describe one or more services based on one or more products.

Service offering usually include (a combination of) :

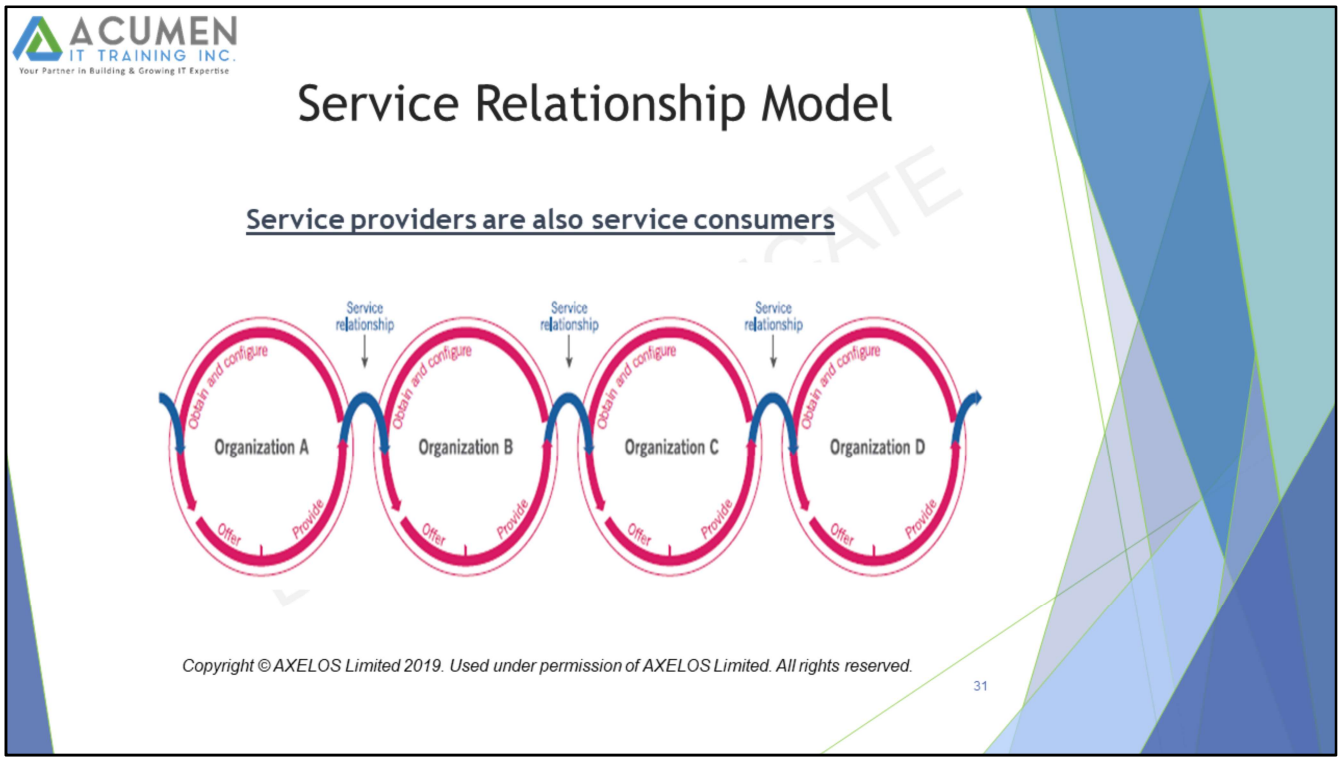
- ***Goods:*** **to be supplied to a consumer** (for example, a mobile phone). Goods are supposed to be transferred from the provider to the consumer, with the consumer taking the responsibility for their future use

- ***Access to resources:*** **granted or licensed to a consumer** under agreed terms and conditions (for example, to the mobile network, or to the network storage). These resources remain under the provider's control and can be accessed by the consumer only during the agreed service consumption period

- ***Service actions performed*****: to address a consumer's needs** (for example, user support). These actions are performed by the service provider according to the agreement with the consumer.

These Service offerings are offered and delivered through suitable Service Relationships with the consumers.

Service relationships are established between two or more organizations to co-create value. In a service relationship, organizations will take on the roles of service providers or service consumers. The two roles are not mutually exclusive, and organizations typically both provide and consume a number of services at any given time.



To create value, an organization must do more than simply provide a service. It must also cooperate with the consumers in service relationships.

Service relationship is a cooperation between a service provider and service consumer.
Service relationships include service provision, service consumption, and service relationship management.

Service provision 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.

Service provision may also include the supplying of goods.

Service consumption includes:

- management of the consumer's resources needed to use the service
- service actions performed by users, including utilizing the provider's resources, and requesting service actions to be fulfilled.

Service consumption may also include the receiving (acquiring) of goods.

Service relationship management involves joint activities performed by a service provider and a service consumer to ensure continual value co-creation based on agreed and available service offerings.

Revision Questions 1

1. Which of the following is the CORRECT definition of Service Management?
    A. Service Management is a set of specialized organizational resources for providing value to customers in the form of services.
    B. Service Management is a set of specialized organizational resources for enabling value to customers in the form of goods and products.
    C. Service Management is a set of specialized organizational capabilities for enabling value for customers in the form of services.
    D. Service Management is a set of specialized organizational capabilities for providing value to the Service Provider in the form of goods and products.

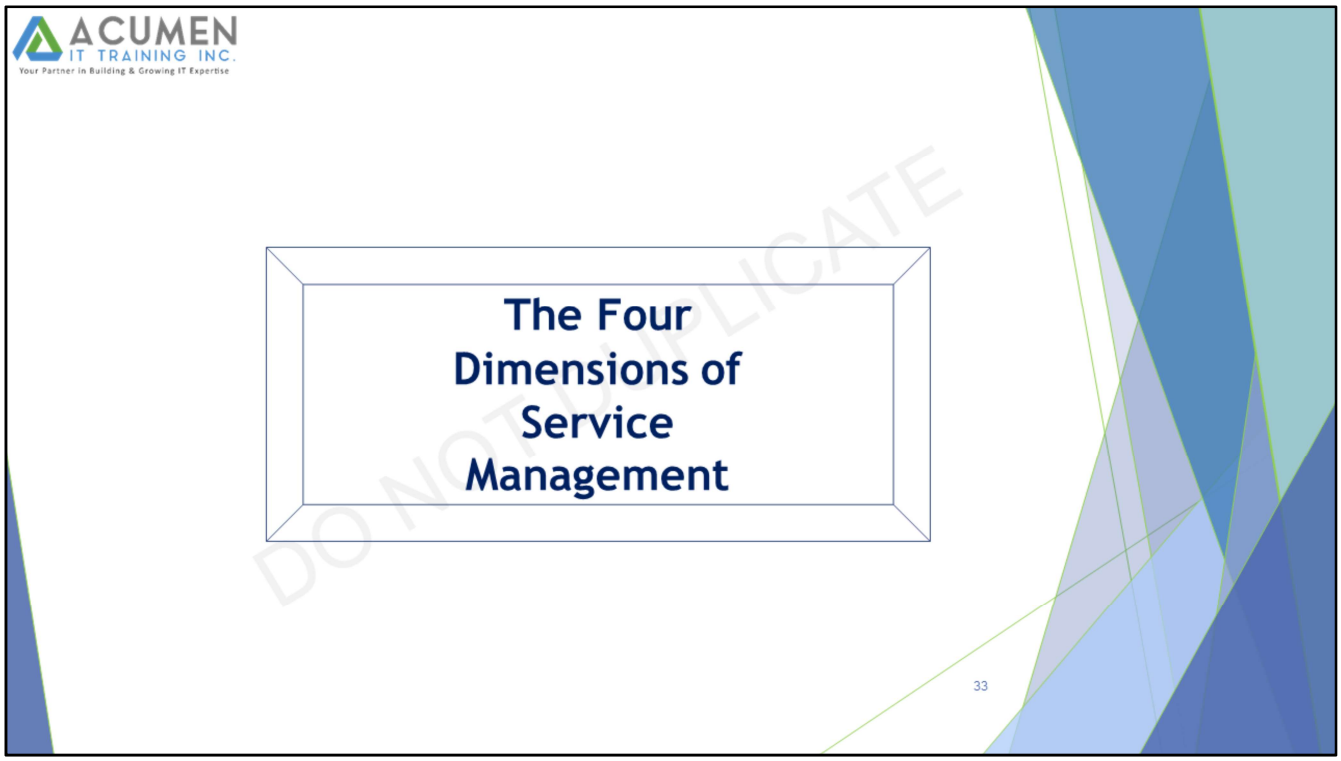
2. Which of the following statements is CORRECT regarding the Service Consumer ?
    1. The Service Consumer cannot be a Sponsor and a User at the same time.
    2. Employees of the service provider cannot be service consumers.
    3. User of a service is not a key stakeholder.
    4. Sponsor approves the budget for service consumption.

3. ITIL® is characterized as:
    A. An international standard
    B. Good practice scheme
    C. A qualification scheme
    D. Academic research.

4. A Service Provider is?
    A. An organization supplying services to one or more external customers
    B. An organization supplying services to one or more internal or external customers
    C. An organization supplying services to one or more internal customers
    D. An organization supplying IT services

4. A _____ defines requirements for services and takes responsibility for outcomes from service consumption.

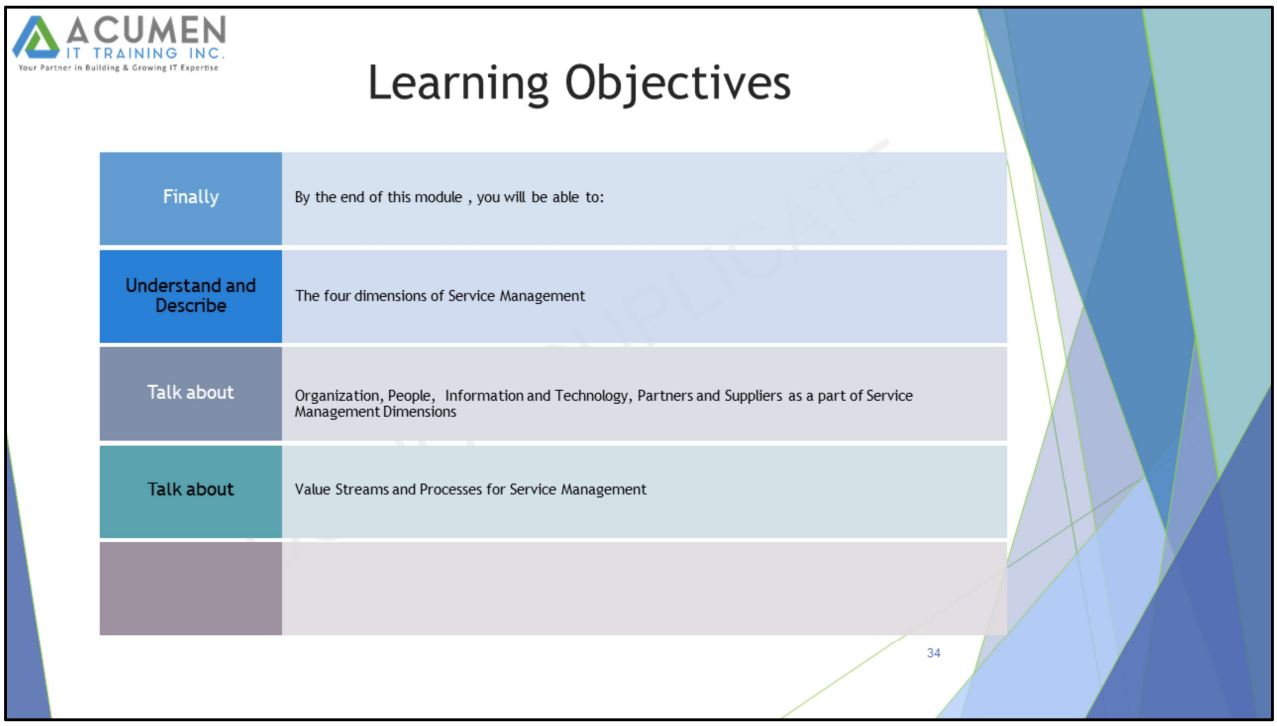
    A. Customer
    B. User
    C. Service Provider
    D. Sponsor

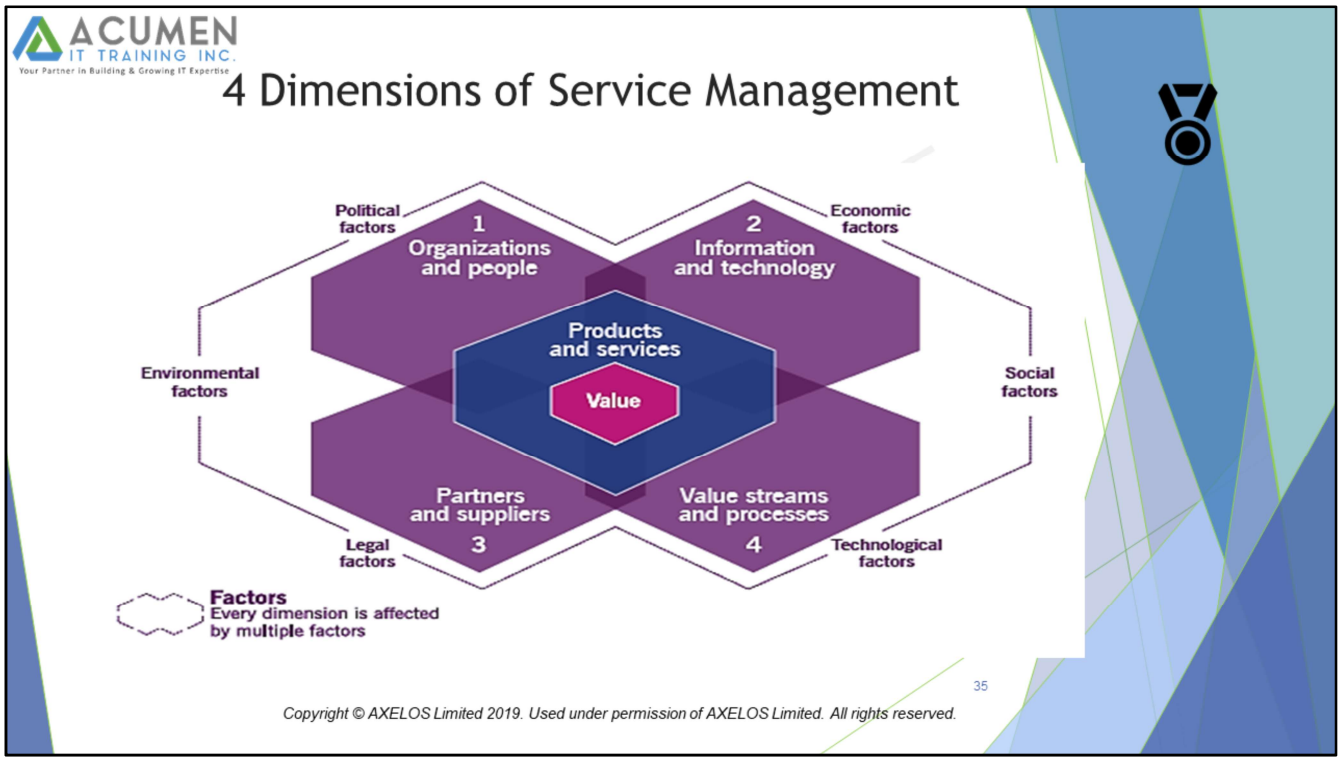


The objective of an organization is to create value for its stakeholders, and this is achieved through the provision and consumption of services.
The ways in which the various components and activities of an organization work together to create this value is described by the ITIL SVS.

However, before this is explored further, the four dimensions of service management must be introduced.

These dimensions are relevant to, and impact upon, all elements of the SVS.





To achieve their desired outcomes and work as effectively as possible, organizations should consider all aspects of their behavior. In practice, however, organizations often become too focused on one area of their initiatives and neglect the others.
There are multiple aspects to service management, and none of these are sufficient to produce the required outcomes when considered in isolation.

For example, process improvements may be planned without proper consideration for the people, partners, and technology involved, or technology solutions can be implemented without due care for the processes or people they are supposed to support.

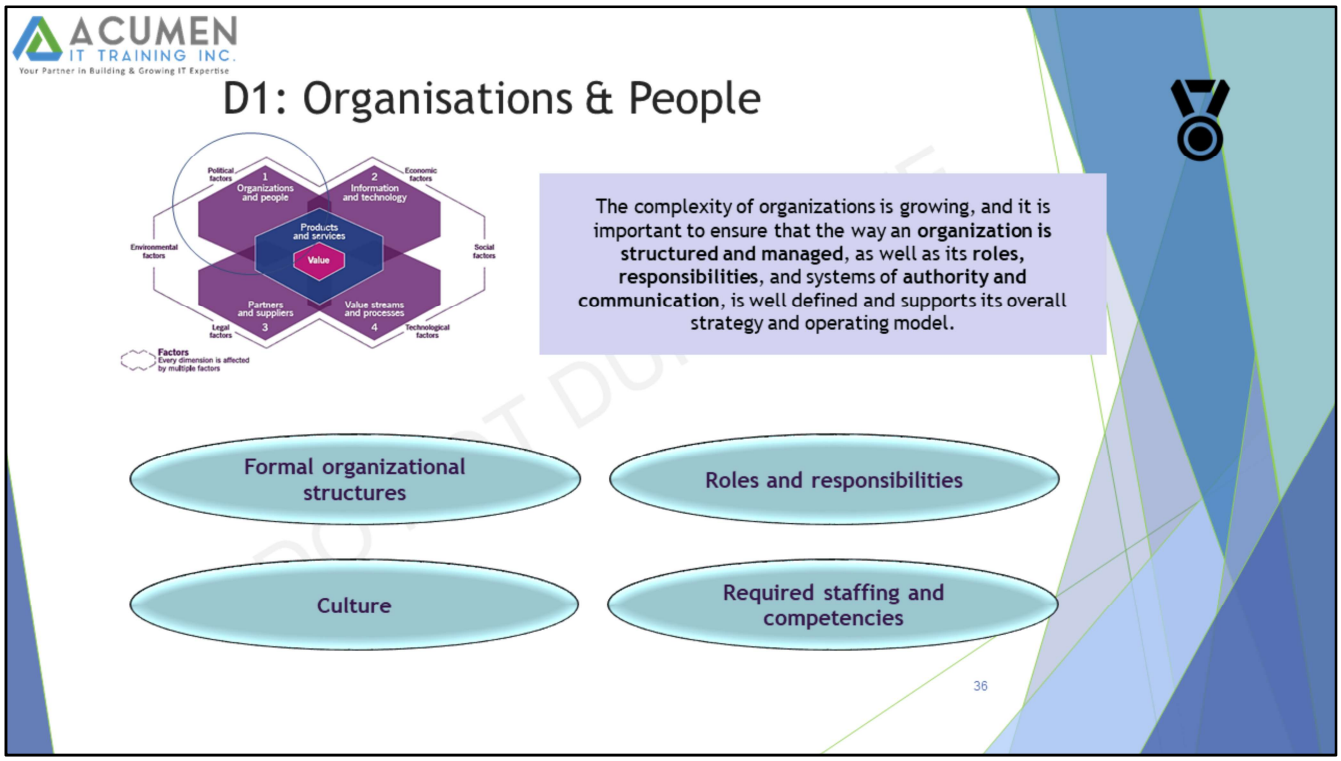
To support a holistic approach to service management, ITIL defines four dimensions that collectively are critical to the effective and efficient facilitation of value for customers and other stakeholders in the form of products and services.

These are:

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

These four dimensions represent perspectives which are relevant to the whole SVS, including the entirety of the service value chain and all ITIL practices.

Note: *PESTLE* is an acronym for the Political, Economic, Social, Technological, Legal, and Environmental factors that constrain or influence how a service provider operates.



It is useful to promote a culture of trust and transparency in an organization that encourages its members to raise and escalate issues and facilitates corrective actions before any issues have an impact on customers.

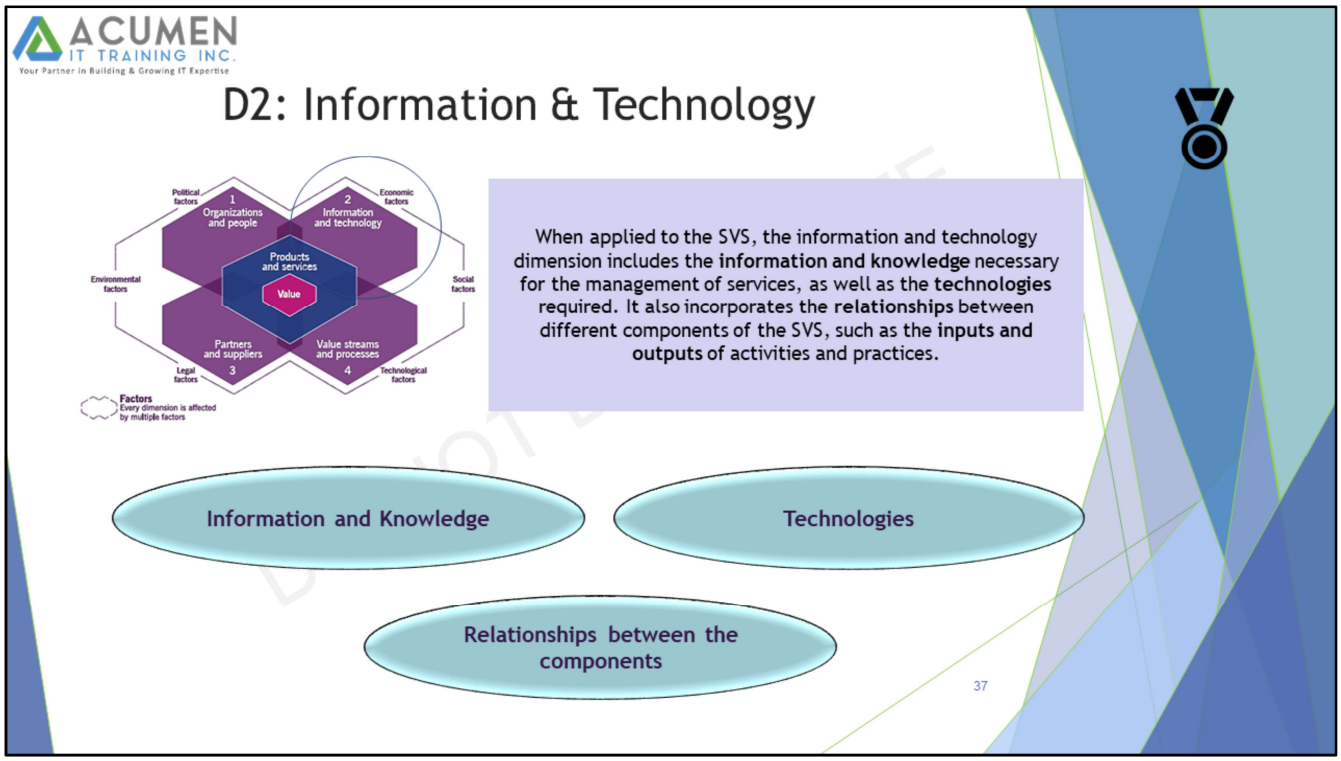
Adopting the ITIL guiding principles can be a good starting point for establishing a healthy organizational culture.

People (whether customers, employees of suppliers, employees of the service provider, or any other stakeholder in the service relationship) are a key element in this dimension.
Promoting a focus on value creation is an effective method of breaking down organizational silos.

The organizations and people dimension of a service covers roles and responsibilities, formal organizational structures, culture, and required staffing and competencies, all of which are related to the creation, delivery, and improvement of a service.

Every person in the organization should have a clear understanding of their contribution towards creating value for the organization, its customers, and other stakeholders. **Promoting a focus on value creation is an effective method of breaking down organizational silos.**

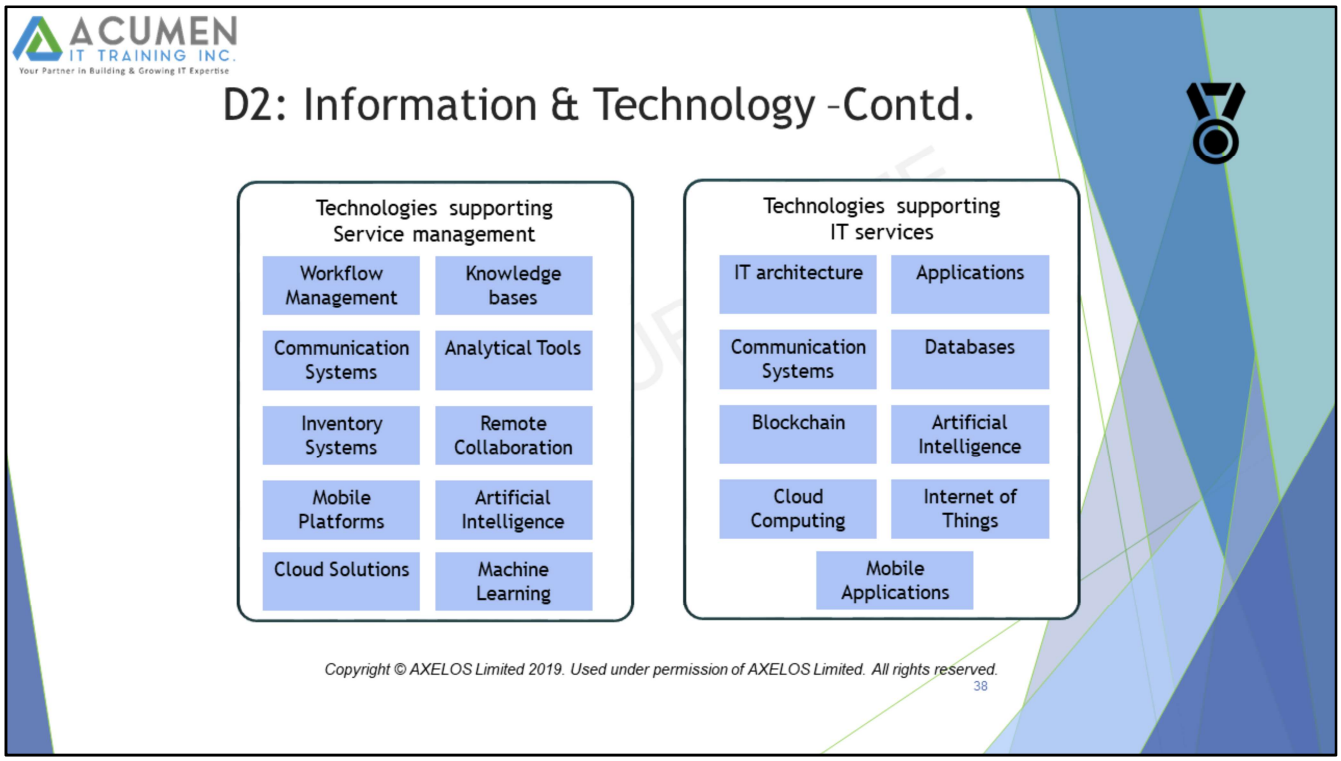
The organizations and people dimension of a service covers roles and responsibilities, formal organizational structures, culture, and required staffing and competencies, all of which are related to the creation, delivery, and improvement of a service.



The second dimension of service management is information and technology. As with the other three dimensions, information and technology applies both to service management and to the services being managed.

It also incorporates the relationships between different components of the SVS, such as the inputs and outputs of activities and practices.

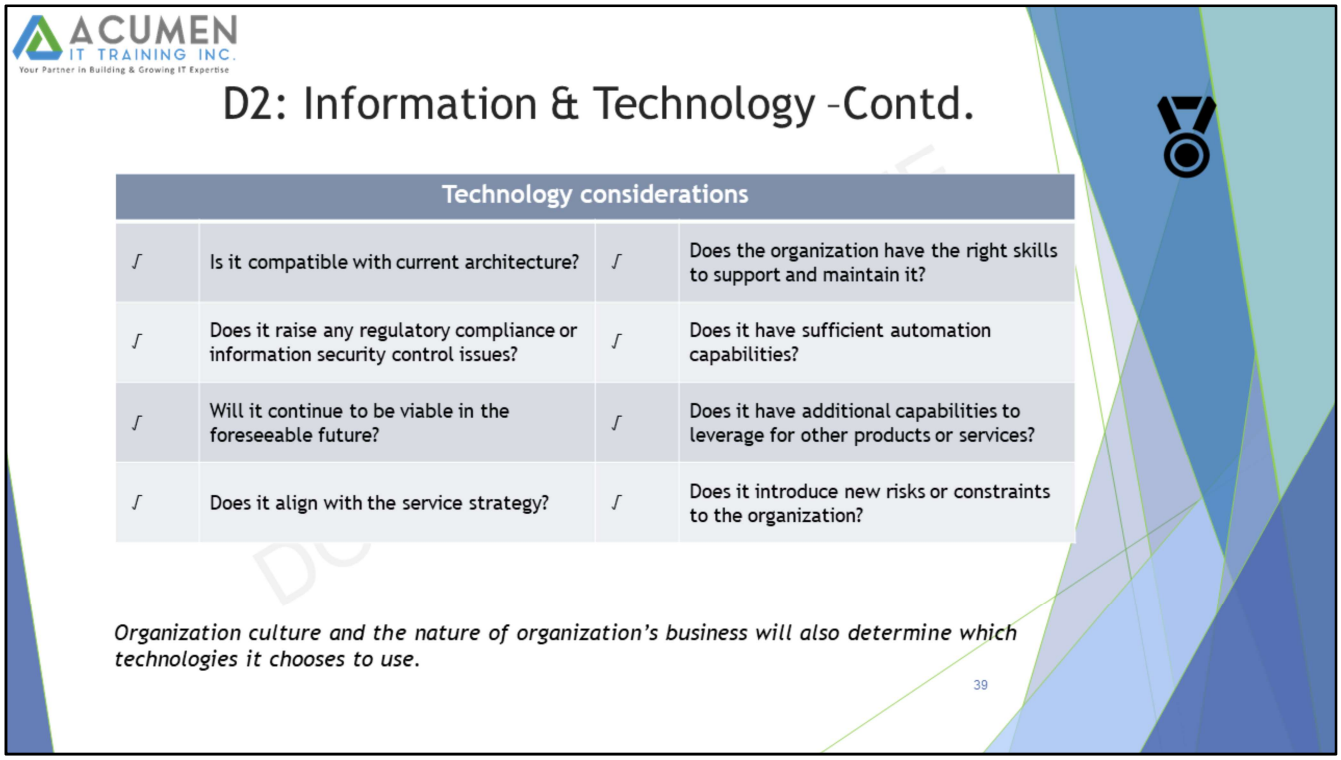
In relation to the information component of this dimension, organizations should consider the following questions:
What information is managed by the services?
What supporting information and knowledge are needed to deliver and manage the services?
How will the information and knowledge assets be protected, managed, archived, and disposed of?



When applied to the ITIL SVS, the information and technology dimension includes the information and knowledge necessary for the management of services, as well as the technologies required.

The technologies that support service management include, but are not limited to, workflow management systems, knowledge bases, inventory systems, communication systems, and analytical tools. Service management increasingly benefits from developments in technology.
Artificial intelligence, machine learning, and other cognitive computing solutions are used at all levels, from strategic planning and portfolio optimization to 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 service providers.

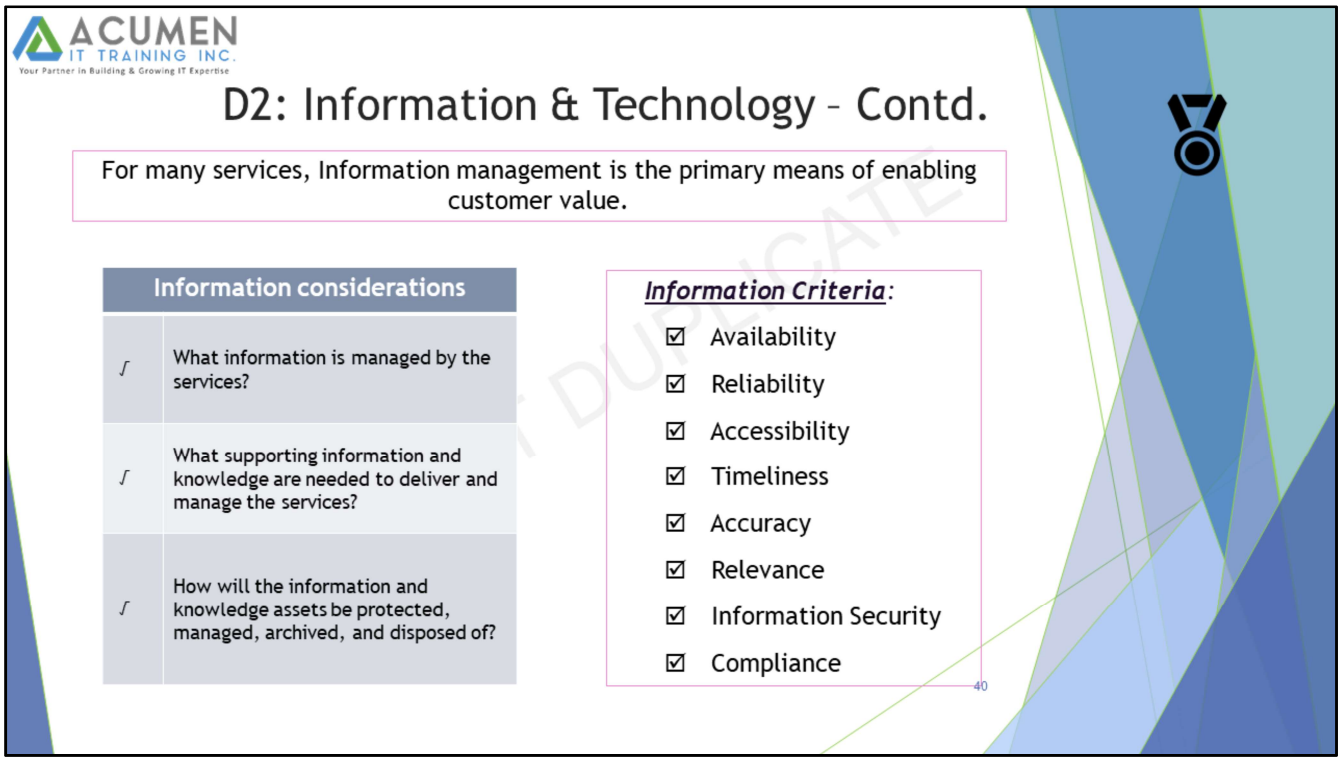
In the context of a specific IT service, this dimension includes the information created, managed, and used in the course of service provision and consumption, and the technologies that support and enable that service.
The specific information and technologies depend on the nature of the services being provided and usually cover all levels of IT architecture, including applications, databases, communication systems, and their integrations.
In many areas, IT services use the latest technology developments, such as blockchain, artificial intelligence, and cognitive computing. These services provide a business differentiation potential to early adopters, especially in highly competitive industries.
Other technology solutions, such as cloud computing or mobile apps, have become common practice across many industries globally.



When considering a technology for use in the planning, design, transition, or operation of a product or service, questions an organization may ask include:

- Is this technology compatible with the current architecture of the organization and its customers? Do the different technology products used by the organization and its stakeholders work together? How are emerging technologies (such as machine learning, artificial intelligence, and Internet of Things) likely to disrupt the service or the organization?
- Does this technology raise any regulatory or other compliance issues with the organization's policies and information security controls, or those of its customers?
- Is this a technology that will continue to be viable in the foreseeable future? Is the organization willing to accept the risk of using aging technology, or of embracing emerging or unproven technology?
- Does this technology align with the strategy of the service provider, or its service consumers?
- Does the organization have the right skills across its staff and suppliers to support and maintain the technology?
- Does this technology have sufficient automation capabilities to ensure it can be efficiently developed, deployed, and operated?
- Does this technology offer additional capabilities that might be leveraged for other products or services?
- Does this technology introduce new risks or constraints to the organization (for example, locking it into a specific vendor)?

The culture of an organization may have a significant impact on the technologies it chooses to use. Some organizations may have more of an interest in being at the cutting edge of technological advances than others. The culture of some other organizations may be more traditional. One company may be keen to take advantage of artificial intelligence, while another may barely be ready for advanced data analysis tools.3



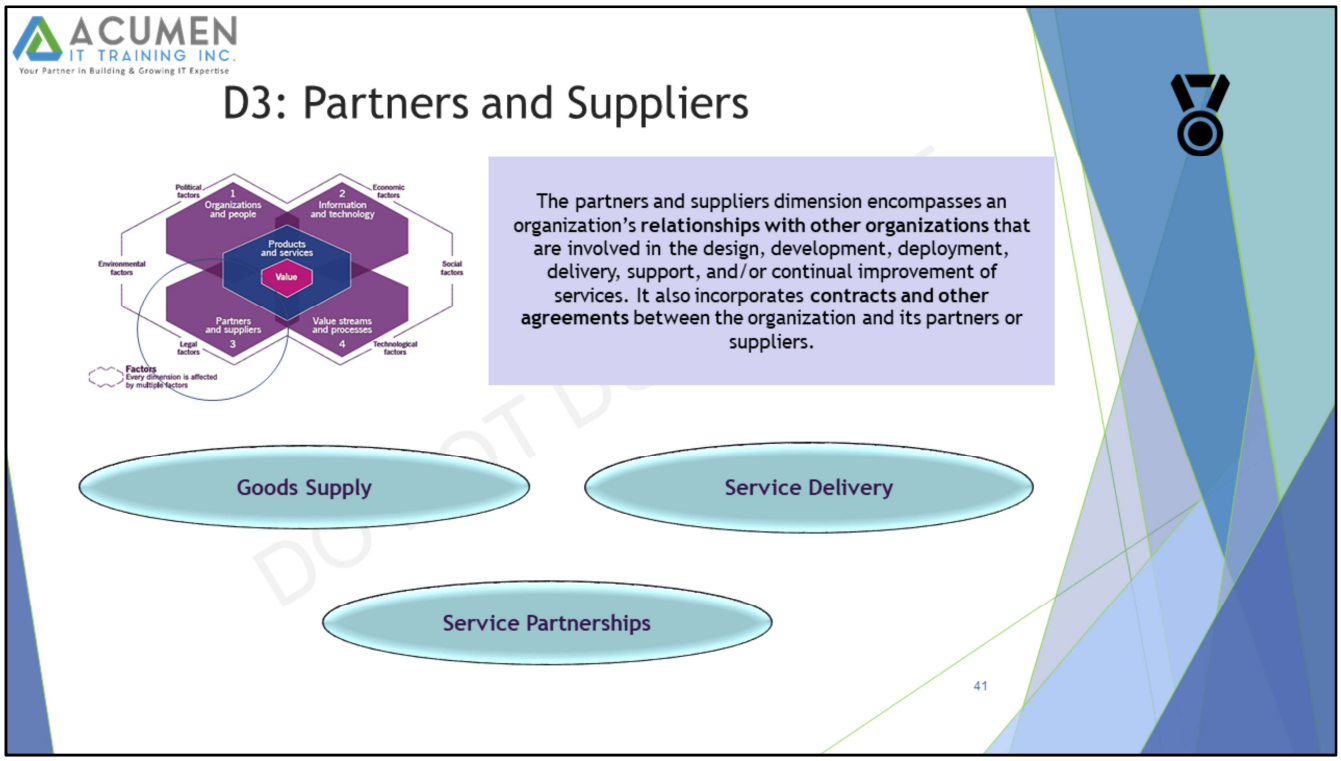
In relation to the information component of this dimension, organizations should consider the following questions:

- What information is managed by the services?
- What supporting information and knowledge are needed to deliver and manage the services?
- How will the information and knowledge assets be protected, managed, archived, and disposed of?

For many services, information management is the primary means of enabling customer value. For example, an HR service facilitates value creation for its customers by enabling the organization to access and maintain accurate information about its employees, their employment, and their benefits, without exposure of private information to unauthorized parties. A network management service facilitates value creation for its users by maintaining and providing accurate information about an organization's active network connections and utilization, allowing it to adjust its network bandwidth capacity. **Information is generally the key output of the majority of IT services which are consumed by business customers.**

Another key consideration in this dimension is how information is exchanged between different services and service components. The information architecture of the various services needs to be well understood and continually optimized, taking into account such criteria as the availability, reliability, accessibility, timeliness, accuracy, and relevance of the information provided to users and exchanged between services.

The challenges of information management, such as those presented by security and regulatory compliance requirements, such as General Data Protection Regulation (GDPR) of European Union are also a focus of this dimension.

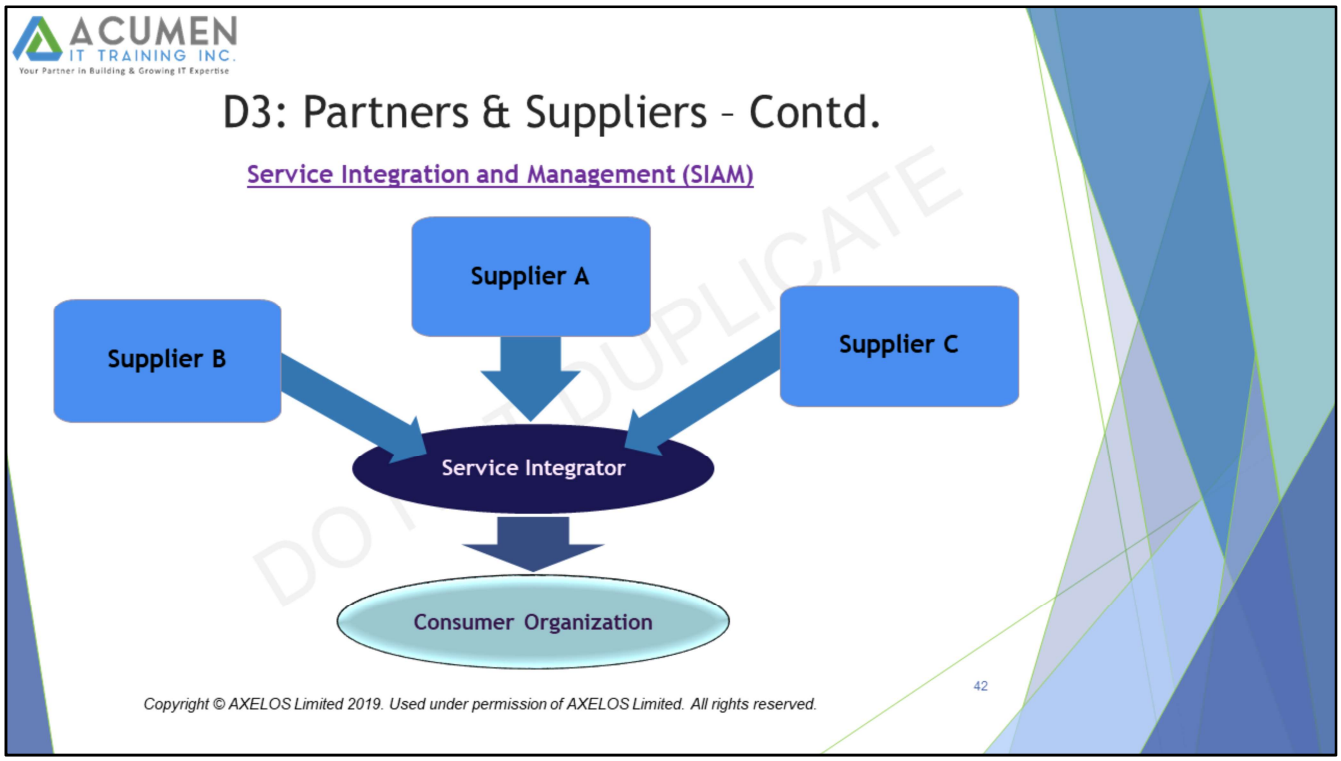


The third dimension of service management is partners and suppliers. Every organization and every service depend to some extent on services provided by other organizations.

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.

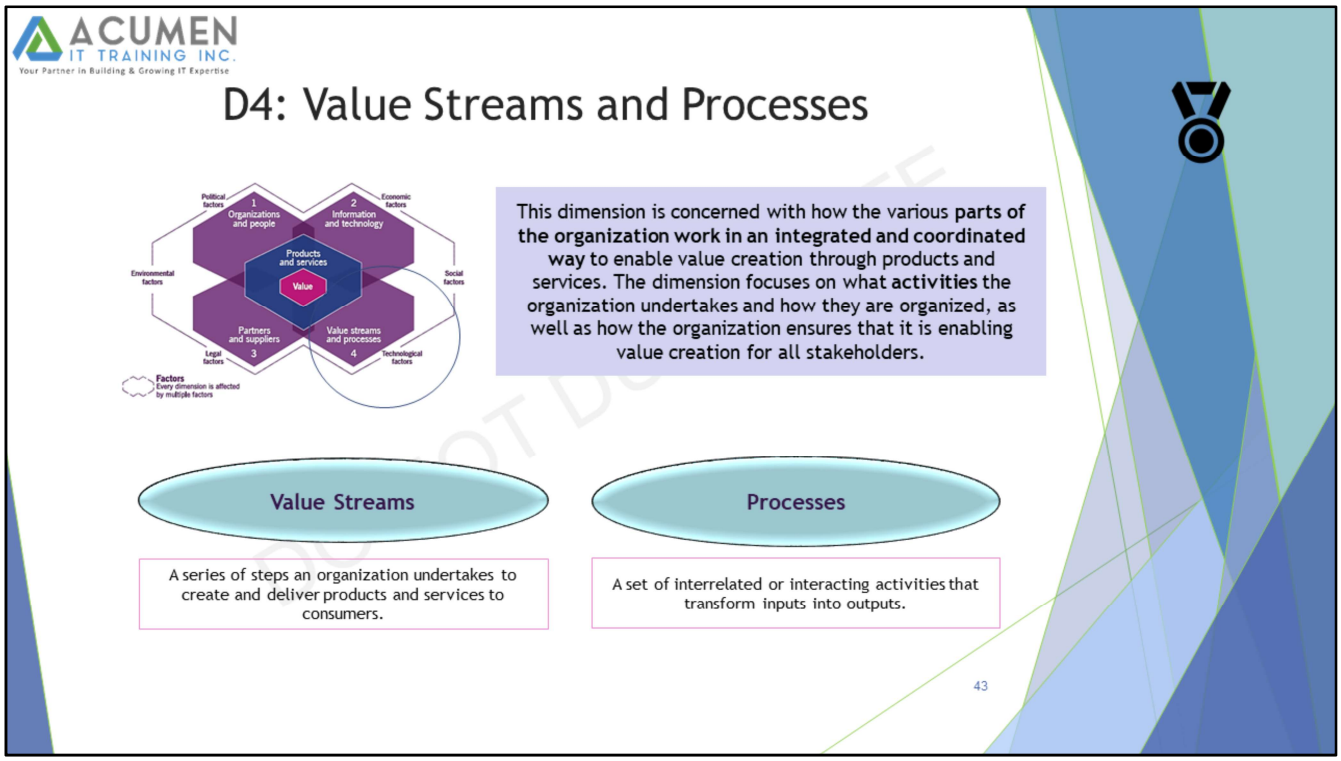
An organization acting as a service provider will have a position on this spectrum, which will vary depending on its strategy and objectives for customer relationships. Likewise, when an organization acts as a service consumer, the role it takes on will depend on its strategy and objectives for sourcing and supplier management.

When it comes to using partners and suppliers, an organization's strategy should be based on its goals, culture, and business environment.
For example, some organizations may believe that they will be best served by focusing their attention on developing certain core competencies, using partners and suppliers to provide other needs. Other organizations may choose to rely as much as possible on their own resources, using partners and suppliers as little as possible. There are, of course, many variations between these two opposite approaches.



One method an organization may use to address the partners and suppliers dimension is service integration and management.

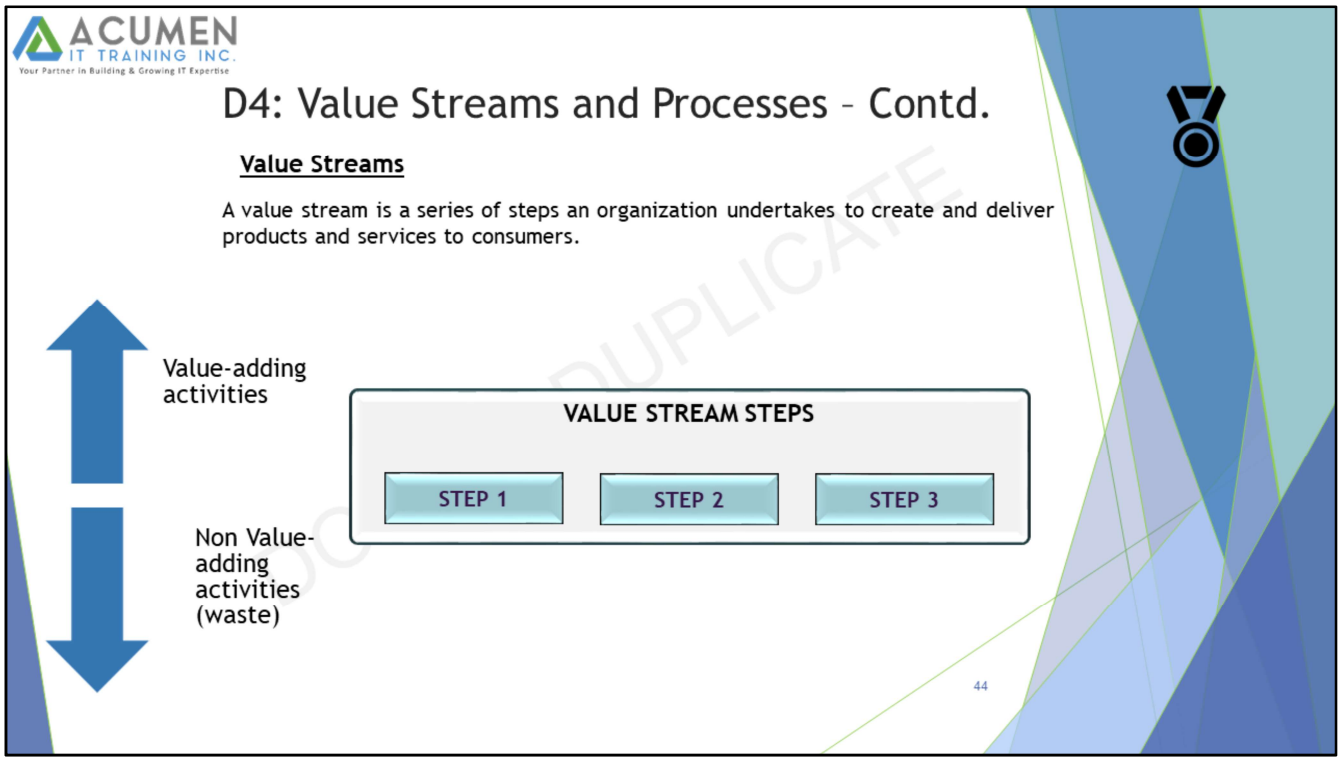
This involves the use of a specially established integrator to ensure that service relationships are properly coordinated. Service integration and management may be kept within the organization, but can also be delegated to a trusted partner.
This function may be kept within the organization, or can be delegated to a trusted partner.



The fourth dimension of service management is value streams and processes. Like the other dimensions, this dimension is applicable to both the SVS in general, and to specific products and services. In both contexts it defines the activities, workflows, controls, and procedures needed to achieve agreed objectives.

The value streams and processes dimension is concerned with how the various parts of the organization work in an integrated and coordinated way to enable value creation through products and services.

The dimension focuses on what activities the organization undertakes and how they are organized, as well as how the organization ensures that it is enabling value creation for all stakeholders efficiently and effectively.



Identifying and understanding the various value streams an organization has is critical to improving its overall performance. Structuring the organization's activities in the form of value streams allows it to have a clear picture of what it delivers and how, and to make continual improvements to its services.

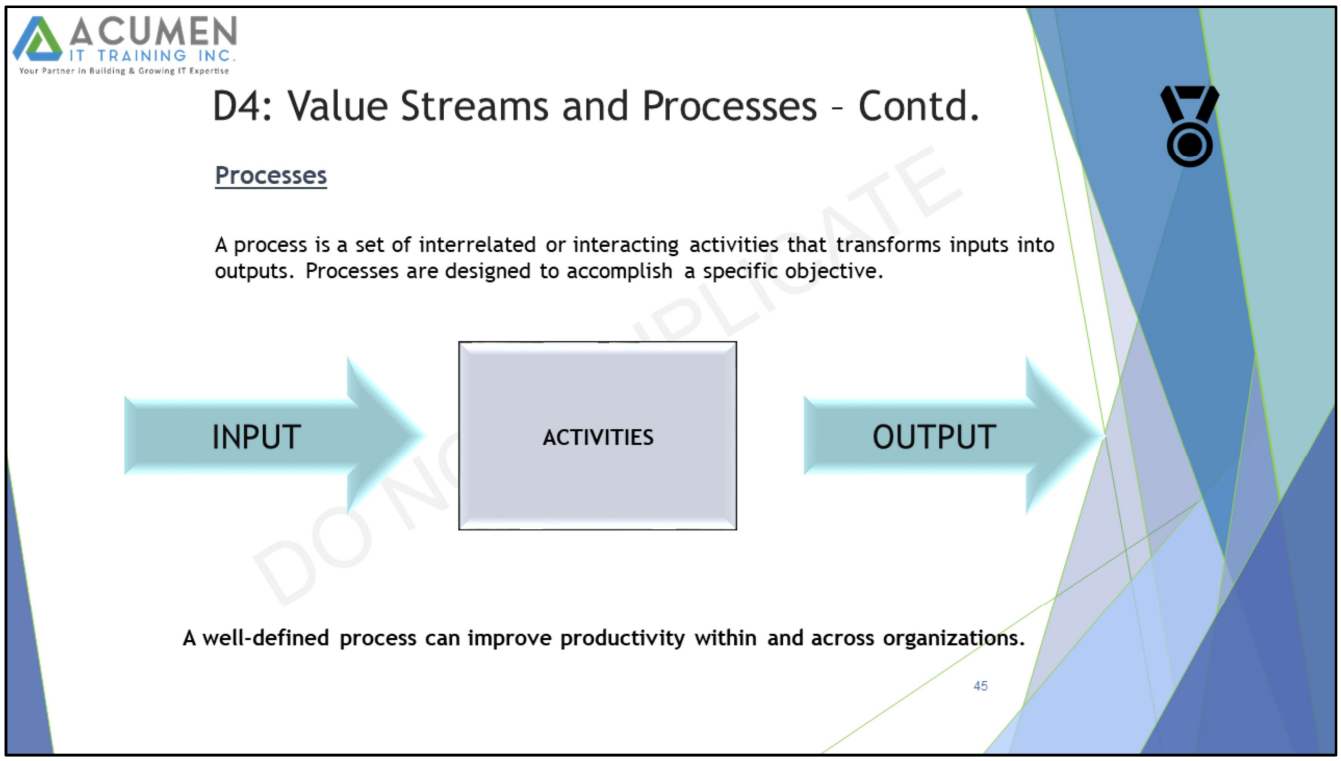
Value streams combine the organization's value chain activities.

Structuring the organization's activities in the form of value streams allows it to have a clear picture of what it delivers and how, and to make continual improvements to its services.

Value stream mapping should be defined by organizations for each of their products and services. Steps may include process automation or adoption of emerging technologies and ways to enhance user experience.

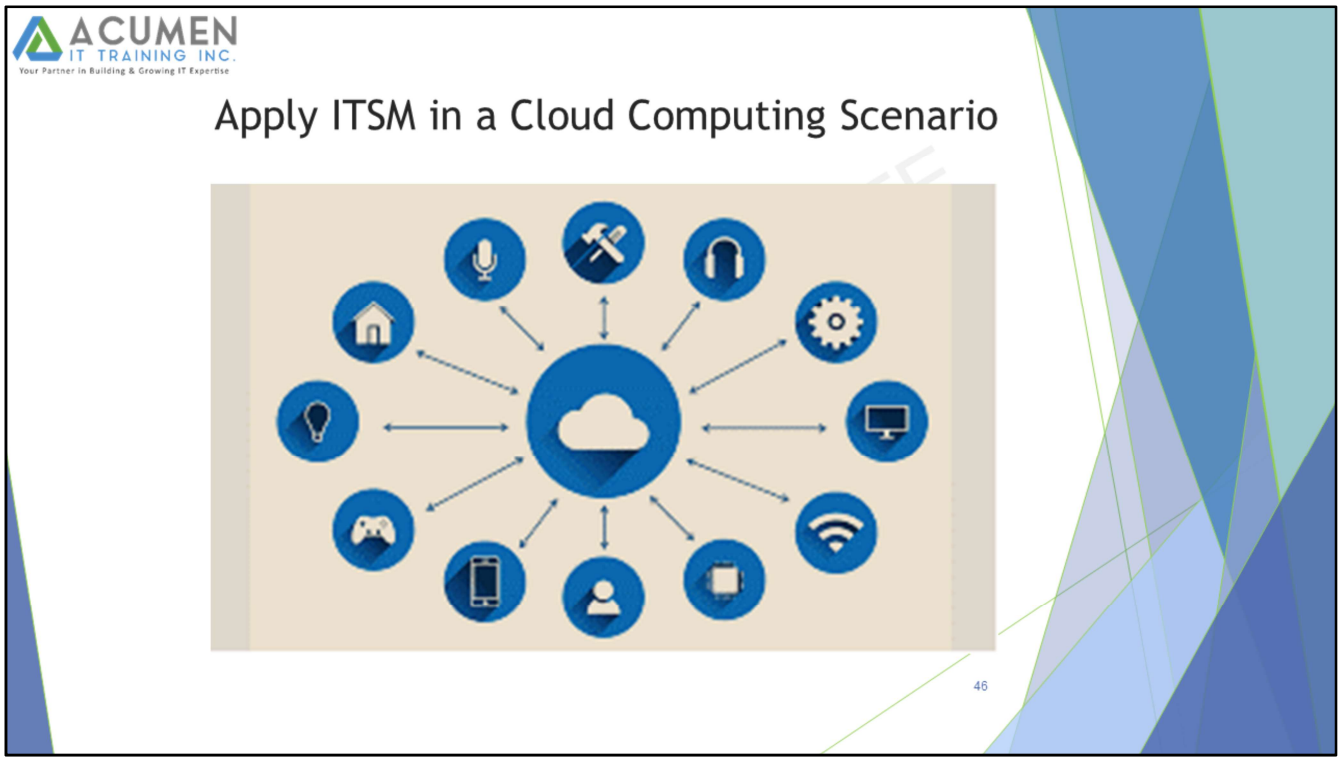
Organizations should examine how they perform work and map all the value streams they can identify. This will enable them to analyze their current state and identify any barriers to workflow and non-value-adding activities, i.e. waste. Wasteful activities should be eliminated to increase productivity.

Opportunities to increase value-adding activities can be found across the service value chain. These may be new activities or modifications to existing ones, which can make the organization more productive. Value stream optimization may include process automation or adoption of emerging technologies and ways of working to gain efficiencies or enhance user experience.



Processes describe what is done to accomplish an objective, and well-defined processes can improve productivity within and across organizations. They are usually detailed in procedures, which outline who is involved in the process, and work instructions, which explain how they are carried out.

Processes define the sequence of actions and their dependencies.

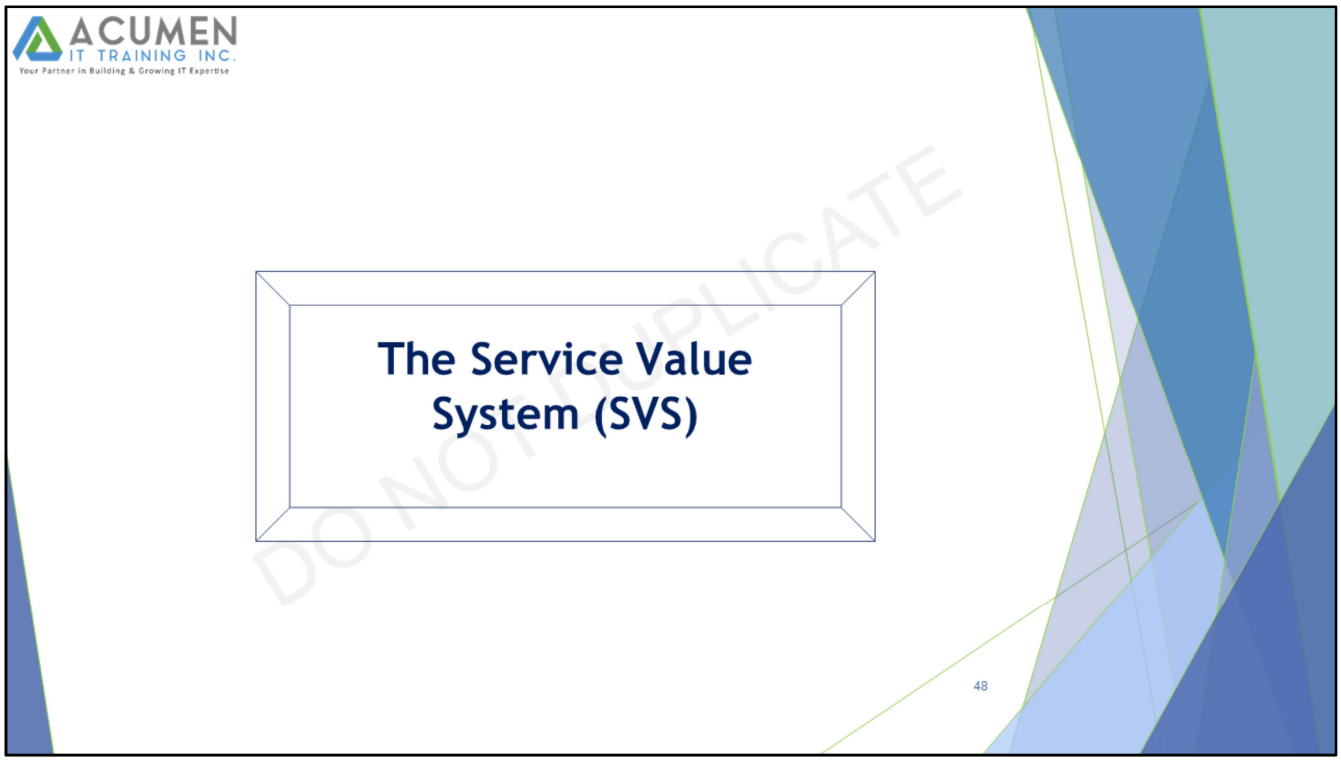


Cloud computing has become an architectural shift in IT, introducing new opportunities and risks. In the context of ITSM, cloud computing changes service architecture and the distribution of responsibilities between service consumers, service providers, and their partners.

In the context of ITSM, cloud computing changes service architecture and the distribution of responsibilities between service consumers, service providers, and their partners. It especially applies to in-house service providers, i.e. the organization's internal IT departments. In a typical situation, adoption of the cloud computing model:

- replaces some infrastructure, previously managed by the service provider, with a partner's cloud service
- decreases or removes the need for infrastructure management expertise and the resources of the service provider
- shifts the focus of service monitoring and control from the in-house infrastructure to a partner's services
- changes the cost structure of the service provider, removing specific capital expenditures and introducing new operating expenditures and the need to manage them appropriately
- introduces higher requirements for network availability and security
- introduces new security and compliance risks and requirements, applicable to both the service provider and its partner providing the cloud service
- provides users with opportunities to scale service consumption using self-service via simple standard requests, or even without any requests.

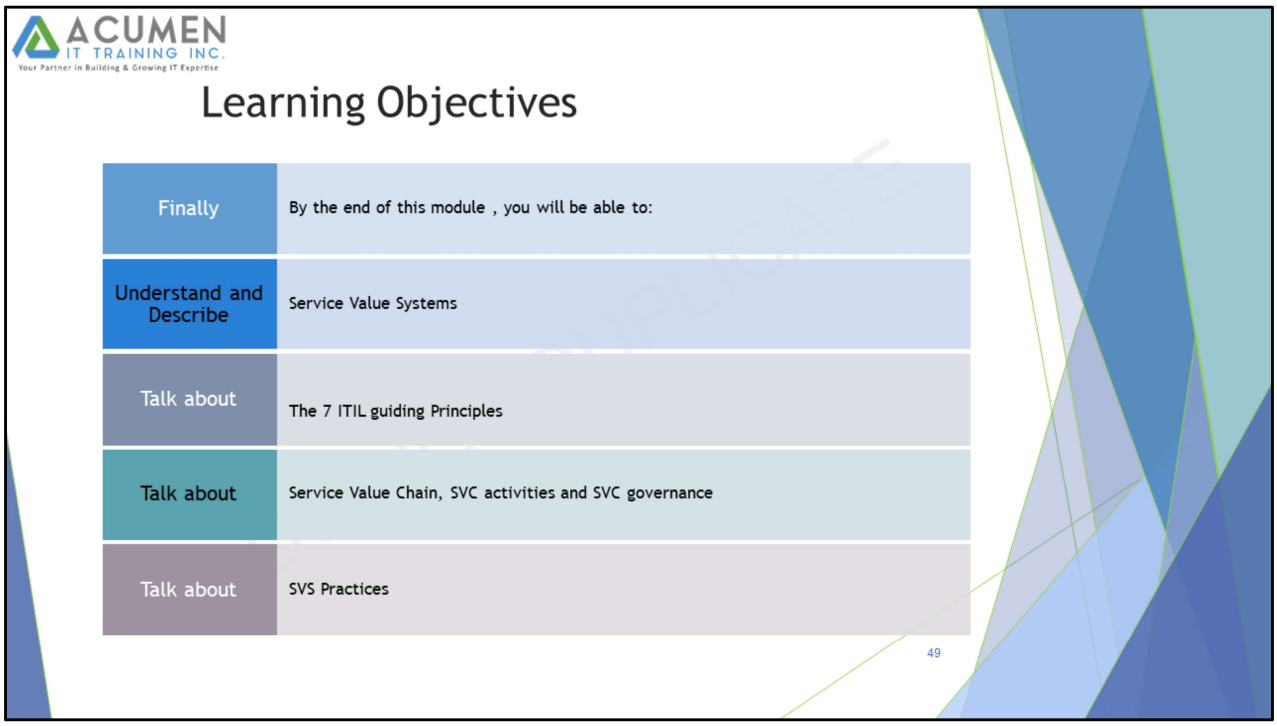
Another important effect of cloud computing, resulting from the computing resources' elasticity, is that the cloud infrastructure may enable significantly faster deployment of new and changed services, thus supporting high-velocity service delivery. The ability to configure and deploy computing resources with the same speed as new applications is an important prerequisite for the success of DevOps and similar initiatives. This supports modern organizations in their need for faster time to market and digitalization of their services.

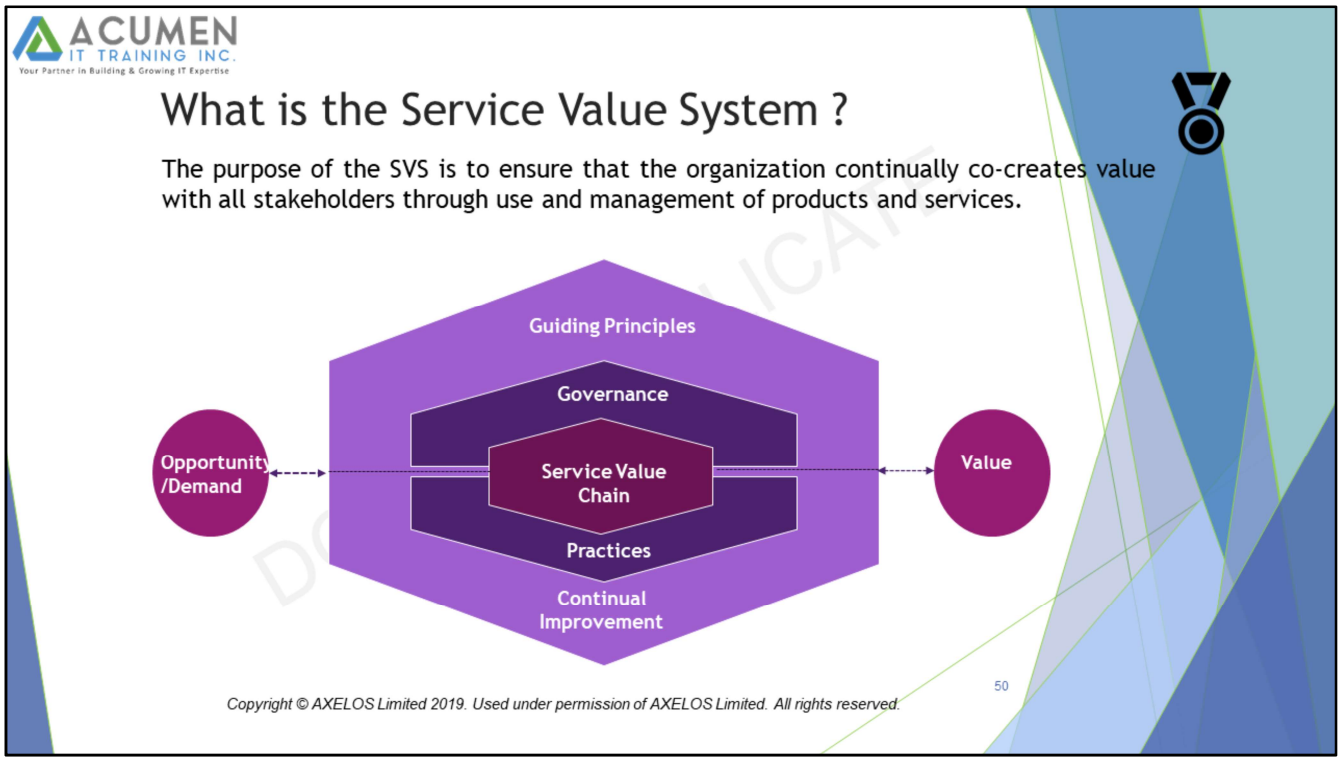


For service management to function properly, it needs to work as a system.

The ITIL Service Value System (SVS) describes the inputs to this system, the elements of this system and the outputs.

Let us now understand the purpose and components of the ITIL service value system .

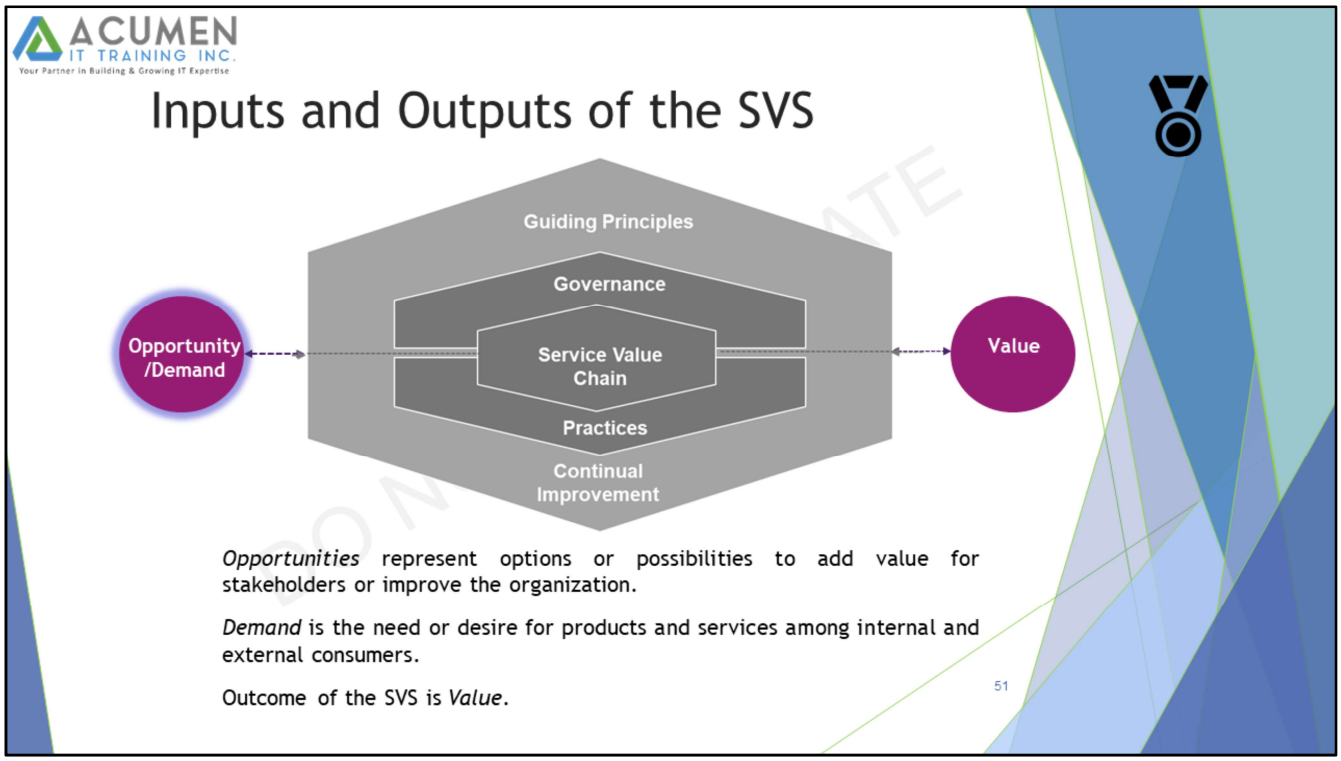




The ITIL SVS describes the inputs to this system (opportunity and demand), the elements of this system (organizational governance, service management, continual improvement, and the organization's capabilities and resources), and the outputs (achievement of organizational objectives and value for the organization, its customers, and other stakeholders).

The ITIL SVS describes how all the components and activities of the organization work together as a system to enable value creation. These components and activities, together with the organization's resources, can be configured and reconfigured in multiple combinations in a flexible way as circumstances change, but this requires the integration and coordination of activities, practices, teams, authorities and responsibilities, and all parties to be truly effective.

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

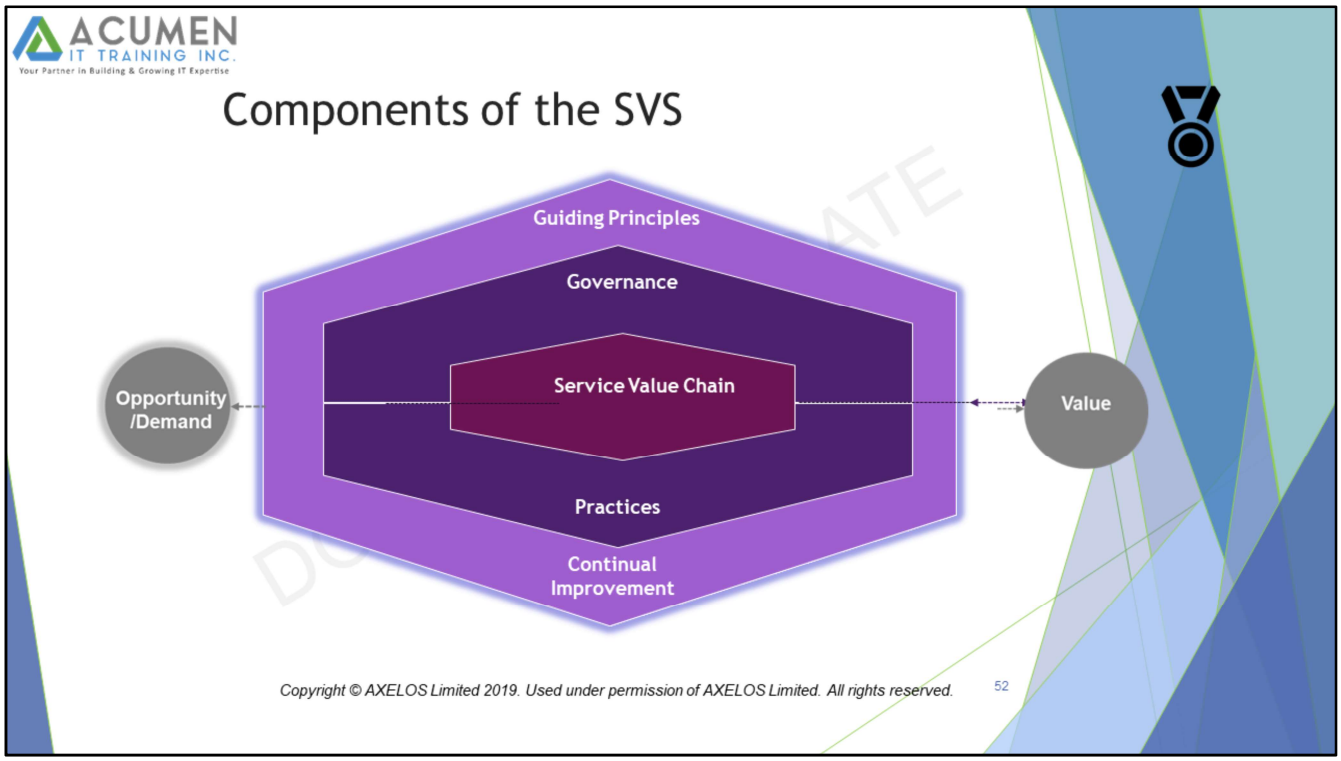


The key inputs to the SVS are opportunity and demand.

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.

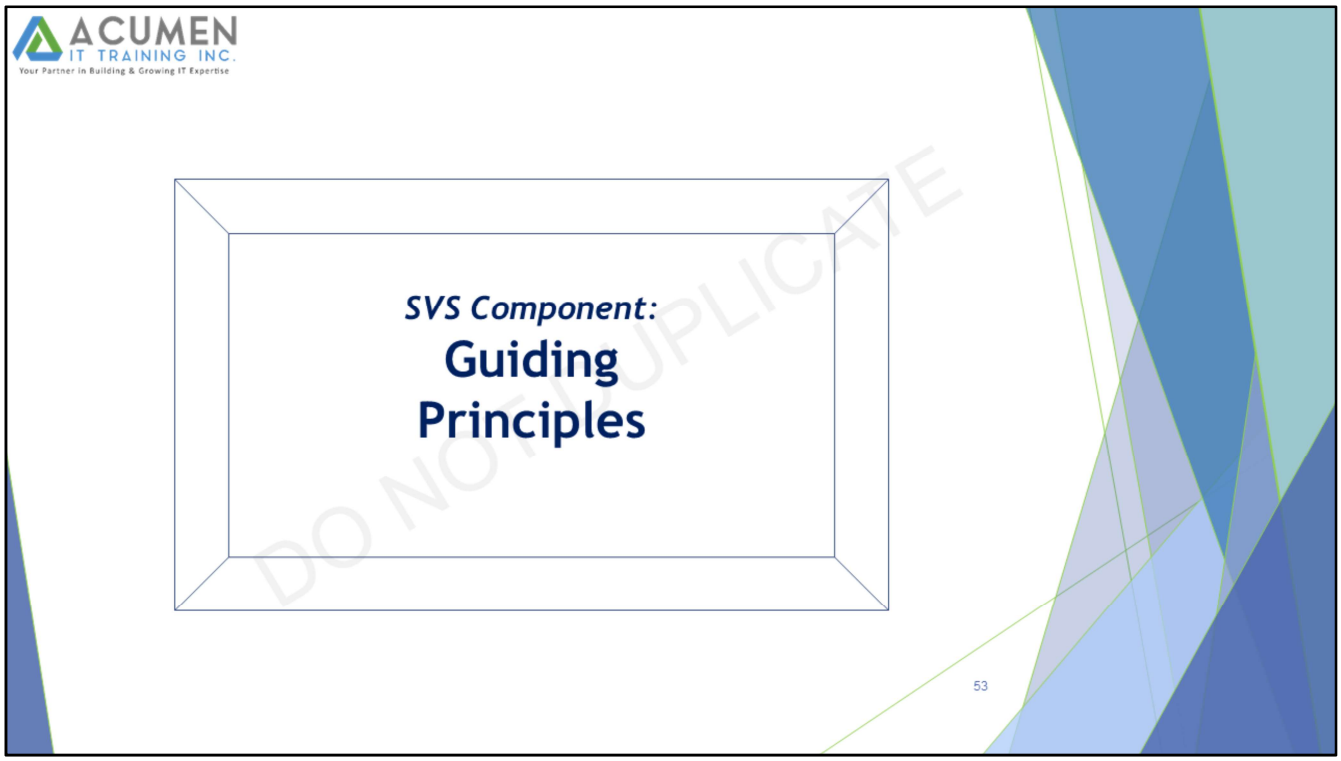
The outcome of the SVS is value, that is, the perceived benefits, usefulness, and importance of something. The ITIL SVS can enable the creation of many different types of value for a wide group of stakeholders.

The left side of the figure shows opportunity and demand feeding into the SVS from both internal and external sources. The right side shows value created for the organization, its customers, and other stakeholders.

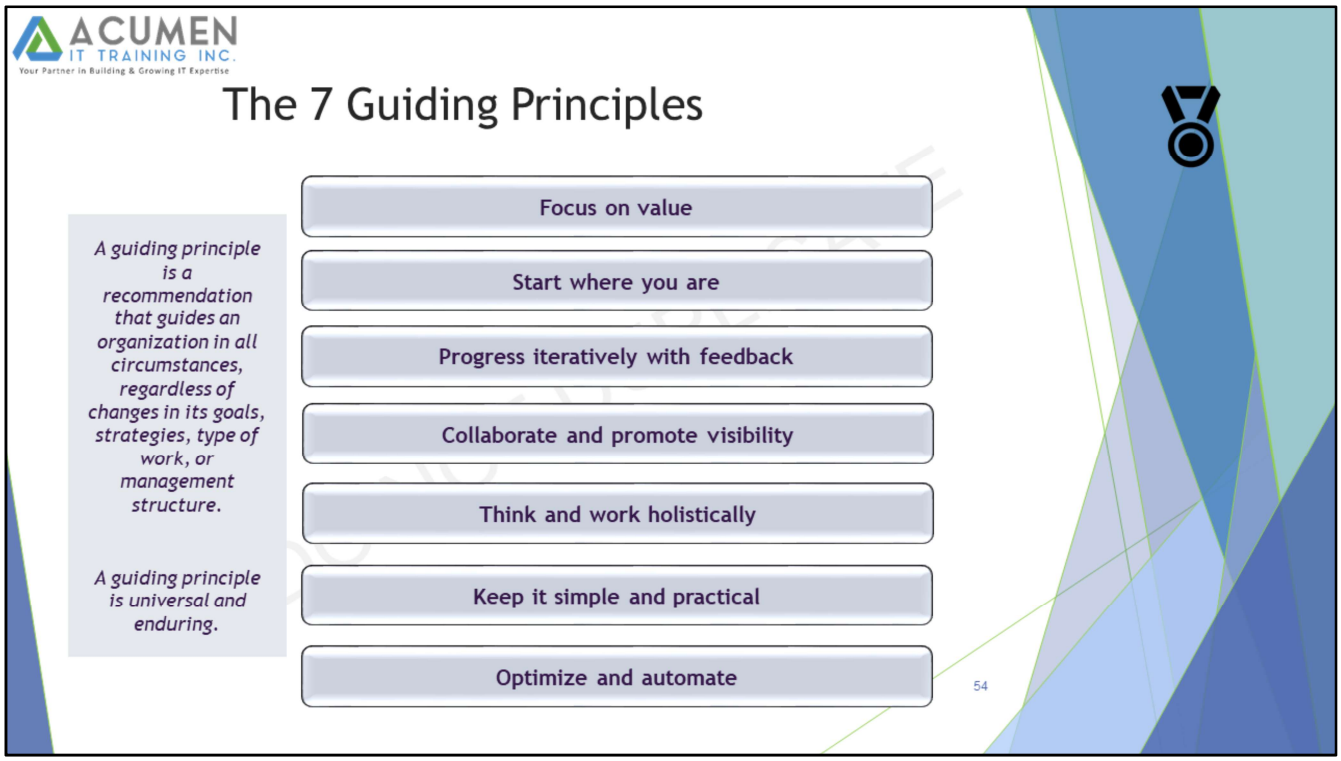


The ITIL SVS includes the following components:

- ***The Guiding Principles*** **are recommendations that can guide an organization in all circumstances, regardless of changes in its goals, strategies , type of work, or management structure.**
- ***Governance*** **is the means by which an organization is directed and controlled.**
- **The *Service value chain (SVC)* is a set of interconnected activities that an organization performs in order to deliver a valuable product or service to its consumers and to facilitate value realization.**
- **The ITIL *Practices* are sets of organizational resources designed for performing work or accomplishing an objective.**
- ***Continual improvement*** **is a recurring organizational activity performed at all levels to ensure that organization's performance continually meets stakeholders' expectations.**



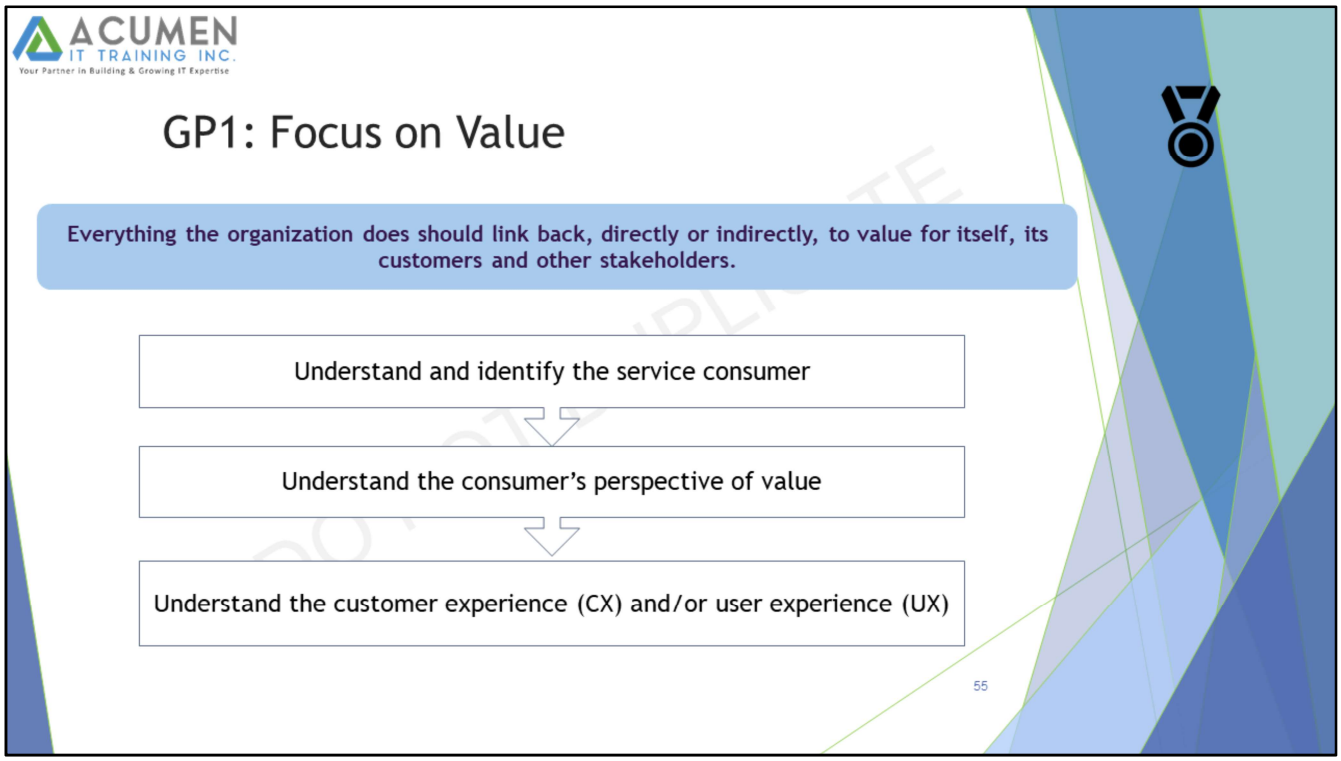
Next, we discuss the component namely Guiding Principles in SVS.



A guiding principle is a recommendation that **guides an organization in all circumstances**, **regardless of changes in its goals, strategies, type of work, or management structure.**
The guiding principles defined here embody the core messages of ITIL and of service management in general.

These principles are also reflected in many other frameworks and/or bodies of knowledge, such as Lean, Agile, DevOps, and COBIT.
This allows organizations to effectively integrate the use of multiple methods into an overall approach to service management.

The guiding principles are applicable to practically any initiative and to all relationships with stakeholder groups.
For example, the first principle, focus on value, can (and should) be applied not only to service consumers, but to all relevant stakeholders and their respective definitions of value.



Everything that the organization does needs to map, directly or indirectly, to value for the stakeholders.
The focus on value principle encompasses many perspectives, including the experience of customers and users.
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). In doing this, the service provider should
consider who will receive value from what is being delivered or improved.

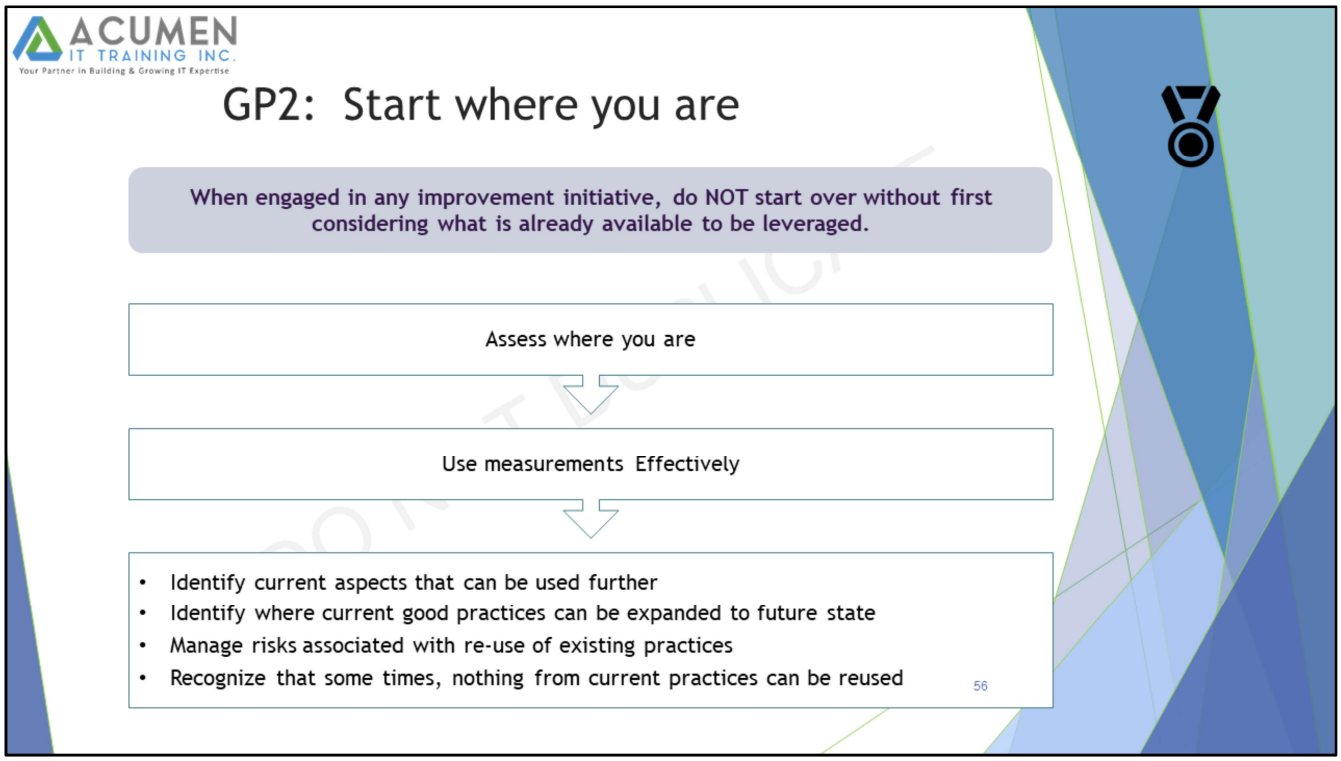
Next the **service provider must understand what is truly of value to the service consumer.**
Value can come in many forms, such as increased productivity, reduced negative impact, reduced costs, the ability to pursue new markets, or a better competitive position. The service provider needs to know:

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

An important element of value is the experience that service consumers have when they interact with the service and the service provider. This is frequently called customer experience (CX) or user experience (UX) depending on the adopted definitions, and it must be actively managed.
Customer experience (CX) can be defined as the entirety of the interactions a customer has with an organization and its products. CX is both objective and subjective.

To Apply this principle:

- **Know how service consumers use each service**
- **Encourage a focus on value among all staff**
- **Focus on value during normal operational activity as well as during improvement initiatives**
- **Include focus on value in every step of any improvement initiative.**



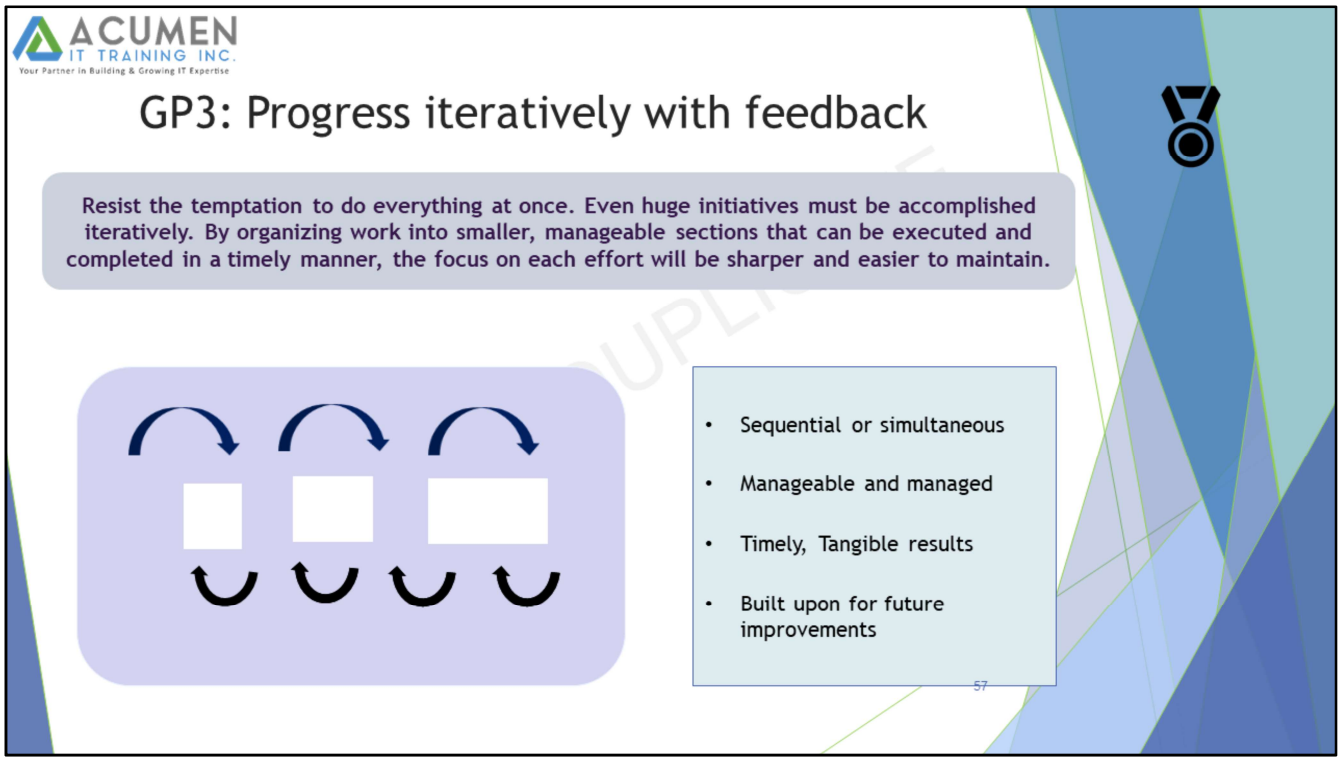
In the process of eliminating old, unsuccessful methods or services and creating something better, there can be great temptation to remove what has been done in the past and build something completely new. This is rarely necessary, or a wise decision. This approach can be extremely wasteful, not only in terms of time, but also in terms of the loss of existing services, processes, 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.

Services and methods already in place should be measured and/or observed directly to properly understand their current state and what can be re-used from them.

The use of measurement is important to this principle. It should be noted that the act of measuring can sometimes affect the results, making them inaccurate.

For example, if a service desk knows it is being monitored on length of time spent on the phone, it might focus too much on minimizing customer engagement (thus leading to good reports), rather than actually helping users resolve issues to their satisfaction.



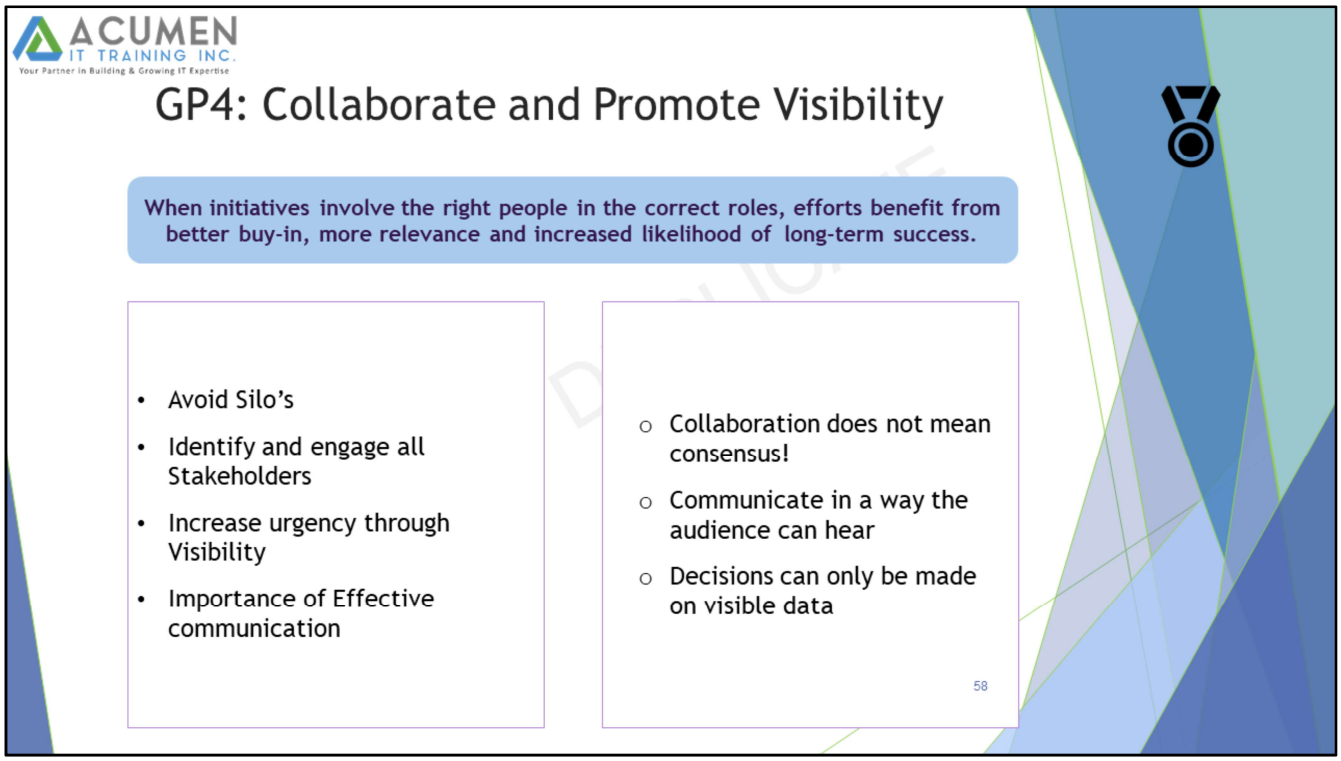
A major improvement initiative or program may be organized into several significant improvement initiatives, and each of these may, in turn, comprise smaller improvement efforts. The overall initiative or program, as well as its component iterations, must be continually re-evaluated and potentially revised to reflect any changes in circumstances and ensure that the focus on value has not been lost.

Improvement iterations can be sequential or simultaneous, based on the requirements of the improvement and what resources are available. 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.
While the iteration is being undertaken, circumstances can change and 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.

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 chain. A feedback loop refers to a situation where part of the output of an activity is used for new input. Once received, feedback can be analyzed to identify improvement opportunities, risks, and issues.
Having appropriate feedback loops between the participants of an activity gives them a better understanding of where their work comes from, where their outputs go, and how their actions and outputs affect the outcomes, which in turn enables them to make better decisions.

To apply this principle successfully, :

- **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 at all times 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. A minimum viable product is a version of the final product which allows the maximum amount of validated learning with the least effort.



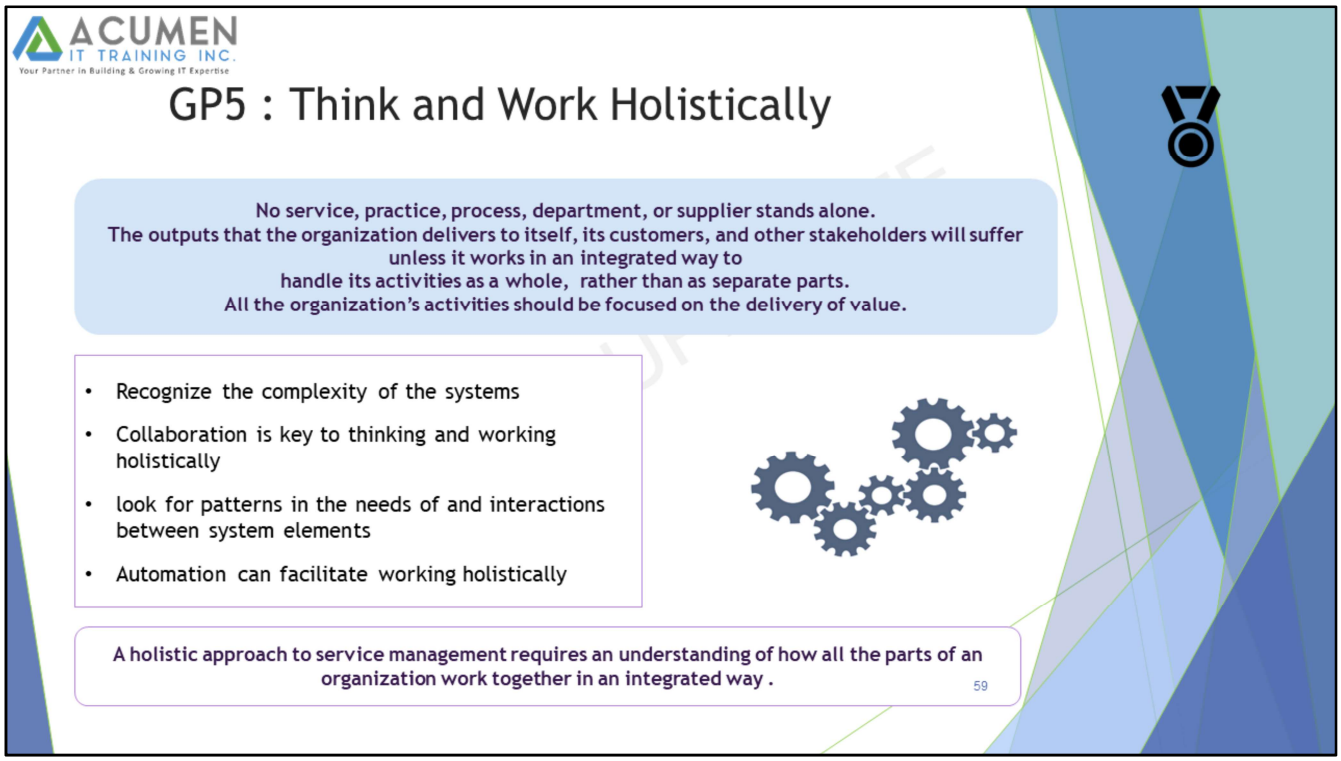
Cooperation and collaboration are better than isolated work, which is frequently referred to as 'silo activity'. Silos can occur through the behavior of individuals and teams, but also through structural causes.
This typically happens where functions or business units in an organization are impeded or unable to collaborate, because their processes, systems, documentation, and communications are designed to fulfil the needs of only a specific part of the organization.
Recognition of the need for genuine collaboration has been one of the driving factors in the evolution of what is now known as *DevOps*. Without effective collaboration, neither *Agile, Lean,* nor any other ITSM framework or method will work.

Working together in a way 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.

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 contribution to improvement of each stakeholder group at each level should be understood; it is also important to define the most effective methods to engage with them. 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. Equally, when staff 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 it is supported by the organization's management.

To apply this principle successfully, consider this advice:

- **Collaboration does not mean consensus:** It is not necessary, or even always wise, to get consensus from everyone involved in an initiative before proceeding.
- **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.

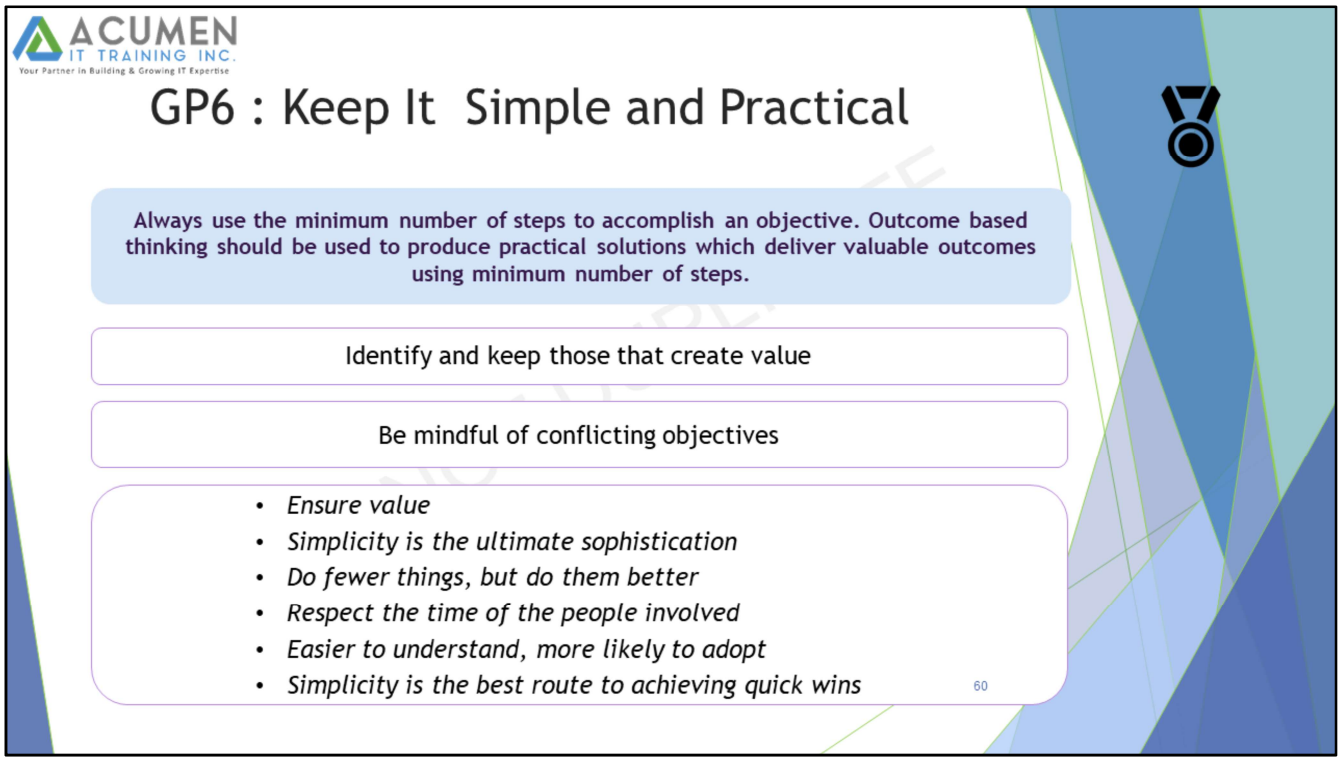


Services are delivered to internal and external service consumers through the coordination and integration of the four dimensions of service management.

Taking a holistic approach to 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, the alteration of one element can impact others and, where possible, these impacts need to be identified, analyzed and planned for.

To apply this principle successfully, consider this advice:

- **Recognize the complexity of the 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 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 needs of and interactions between system elements**: Draw on knowledge in 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 view point can be achieved.
- **Automation can facilitate working holistically**: Where the opportunity and sufficient resources are available, automation can support end-to-end visibility for the organization and provide an efficient means of integrated management.



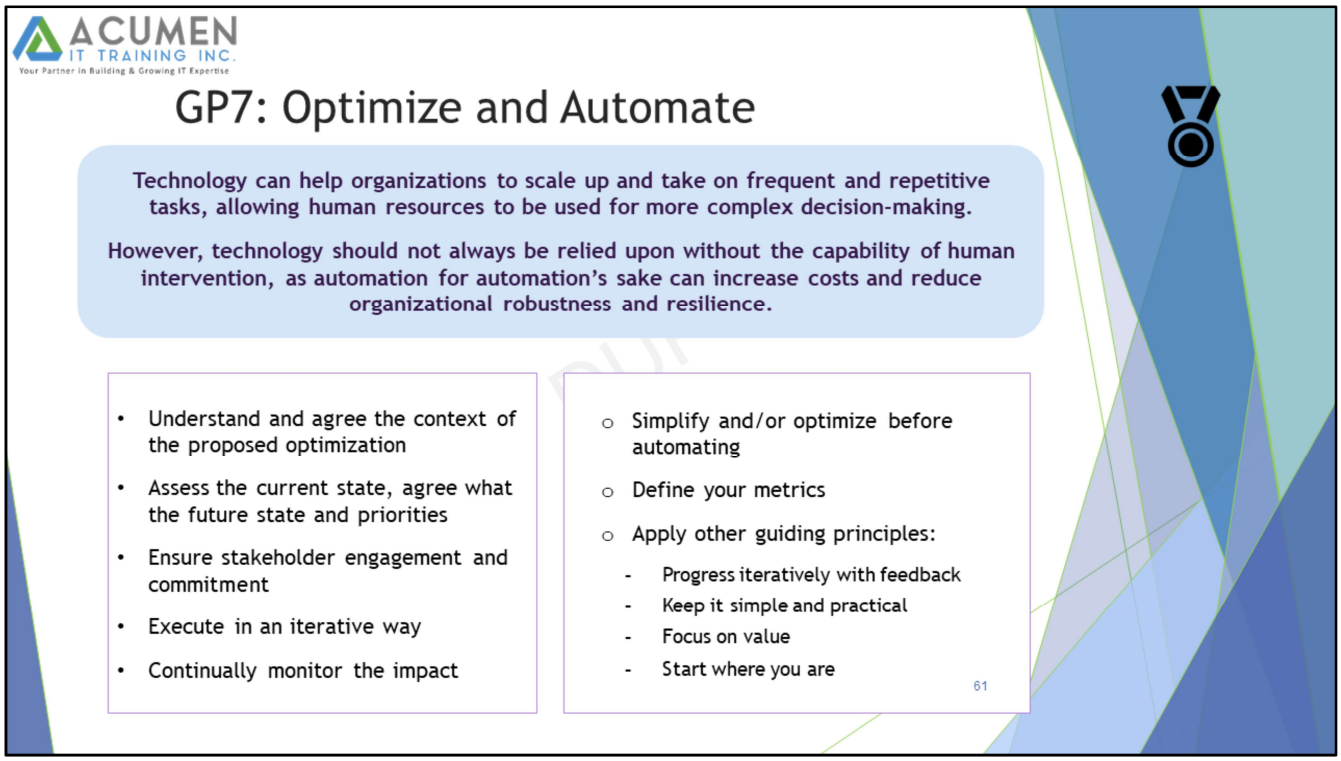
Always use the minimum number of steps to accomplish an objective. **Outcome-based thinking should be used to produce practical solutions that deliver valuable outcomes.**
If a process, service, action, or metric fails to provide value or produce a useful outcome, then eliminate it. Although this principle may seem obvious, it is frequently ignored, resulting in overly complex methods of work that rarely maximize outcomes or minimize cost.

When analyzing a practice, process, service, metric, or other improvement target, always ask whether it contributes to value creation. When designing or improving service management, it is better to start with an uncomplicated approach and then carefully add controls, activities, or metrics when it is seen that they are truly needed.
It is critical to keeping service management simple and practical is understanding exactly how something contributes to value creation.

When designing, managing, or operating practices, 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 services should only generate data that will truly provide value to the decision-making process, and record-keeping should be simplified and automated where possible to maximize value and reduce non-value-adding work.

To apply this principle successfully, consider this advice:

- **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.
- **Respect the time of the people involved:** A process that is too complicated and bureaucratic is a poor use of the time of the people involved.
- Easier to understand, more likely to adopt: To embed a practice, make sure it is easy to follow.
- Simplicity is the best route to achieving quick wins: Whether in a project, or when improving daily operations activities, quick wins allow organizations to demonstrate progress and manage stakeholder expectations. Working in an iterative way with feedback will quickly deliver incremental value at regular intervals.



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

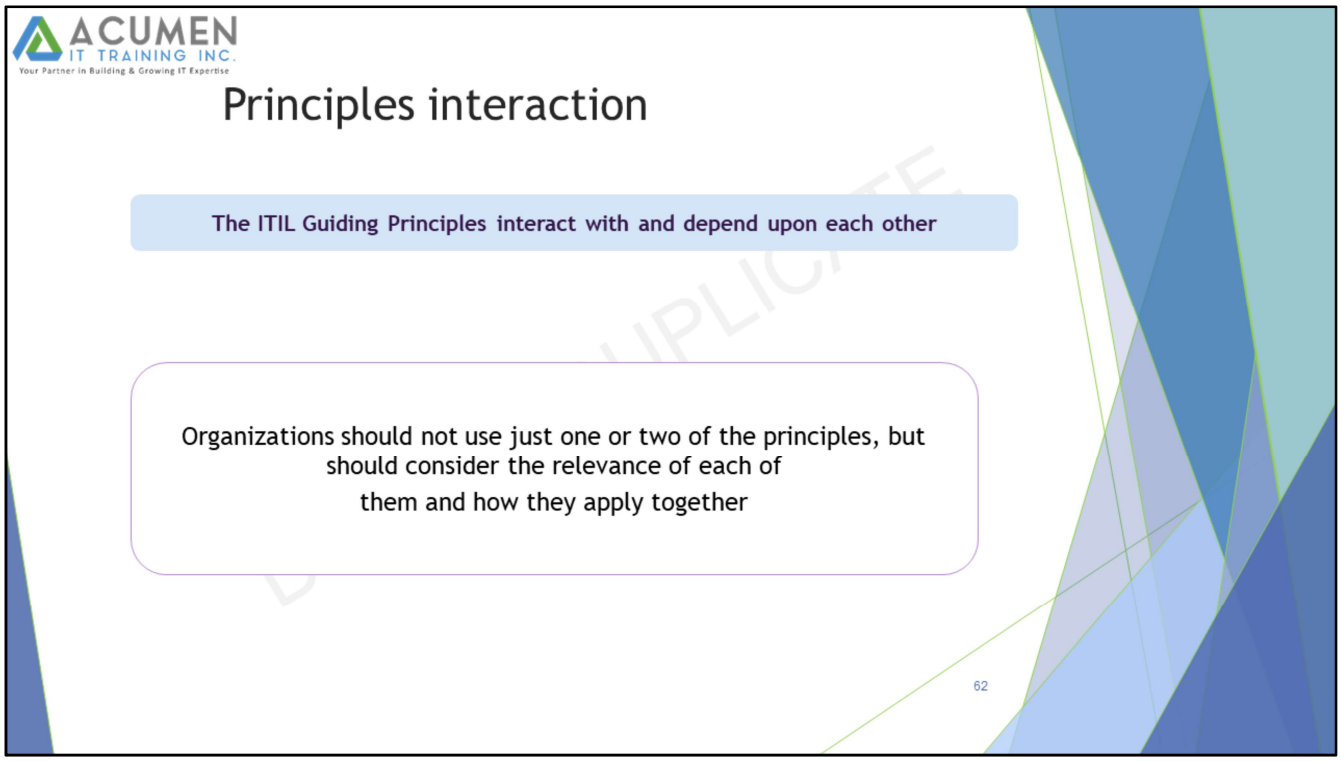
There are many ways in which practices and services can be optimized. The concepts and practices described in ITIL, particularly the practices of continual improvement, and measurement and reporting are essential to this effort.
The specific practices an organization uses to improve and optimize performance may draw upon guidance from ITIL, Lean, DevOps, Kanban, and other sources. Regardless of the specific techniques, the path to optimization follows these high-level steps listed in the above list on the left.

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 release of code from development through to live, and often automatic testing occurring 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 part of a process to allow decisions to be made 'automatically'.

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

To apply this principle successfully, consider this advice:

- **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 processes as far as possible, and streamline where you can (optimize). From there you can start to automate.
- **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 that the metrics are outcome-based and focused on value.
- Use the other guiding principles when applying this one: When optimizing and automating, it is smart to
- follow the other principles as well, as shown above.

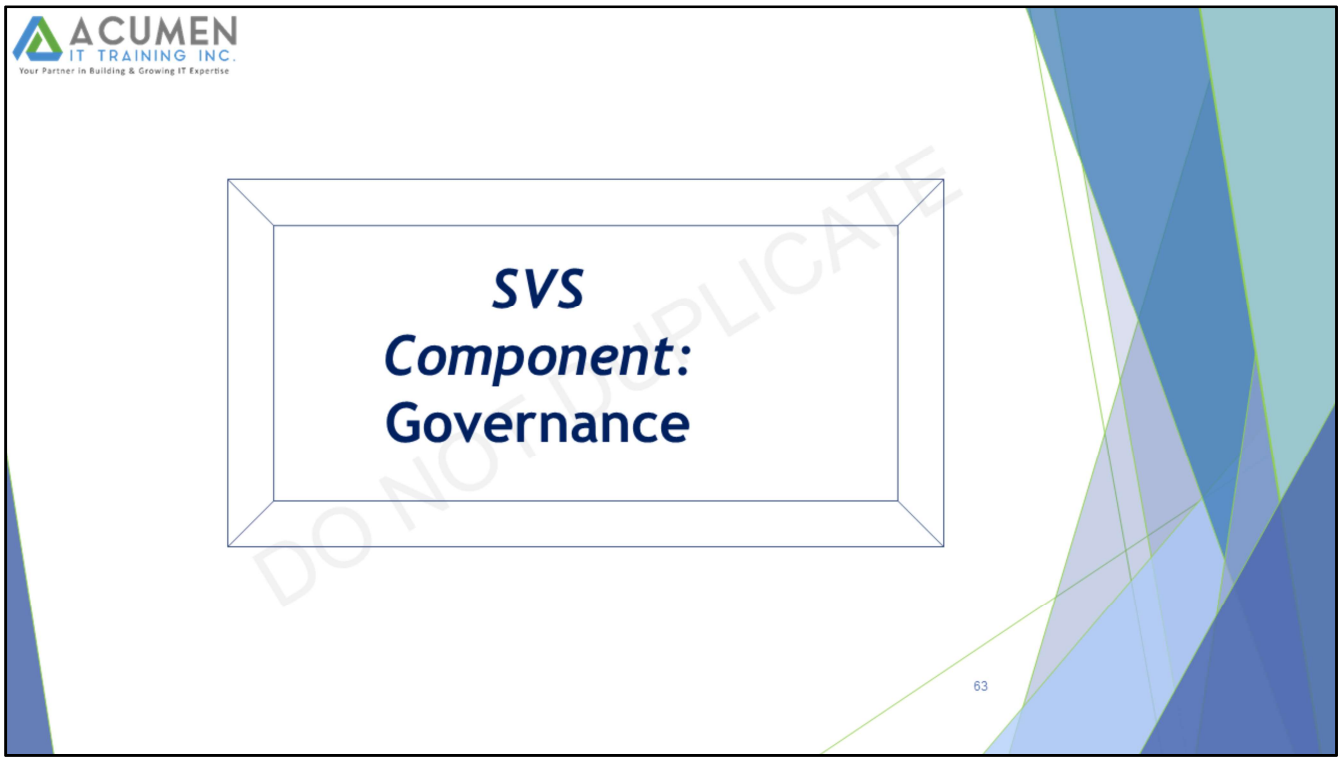


As well as being aware of the ITIL guiding principles, it is also important to recognize that they interact with and depend upon each other.

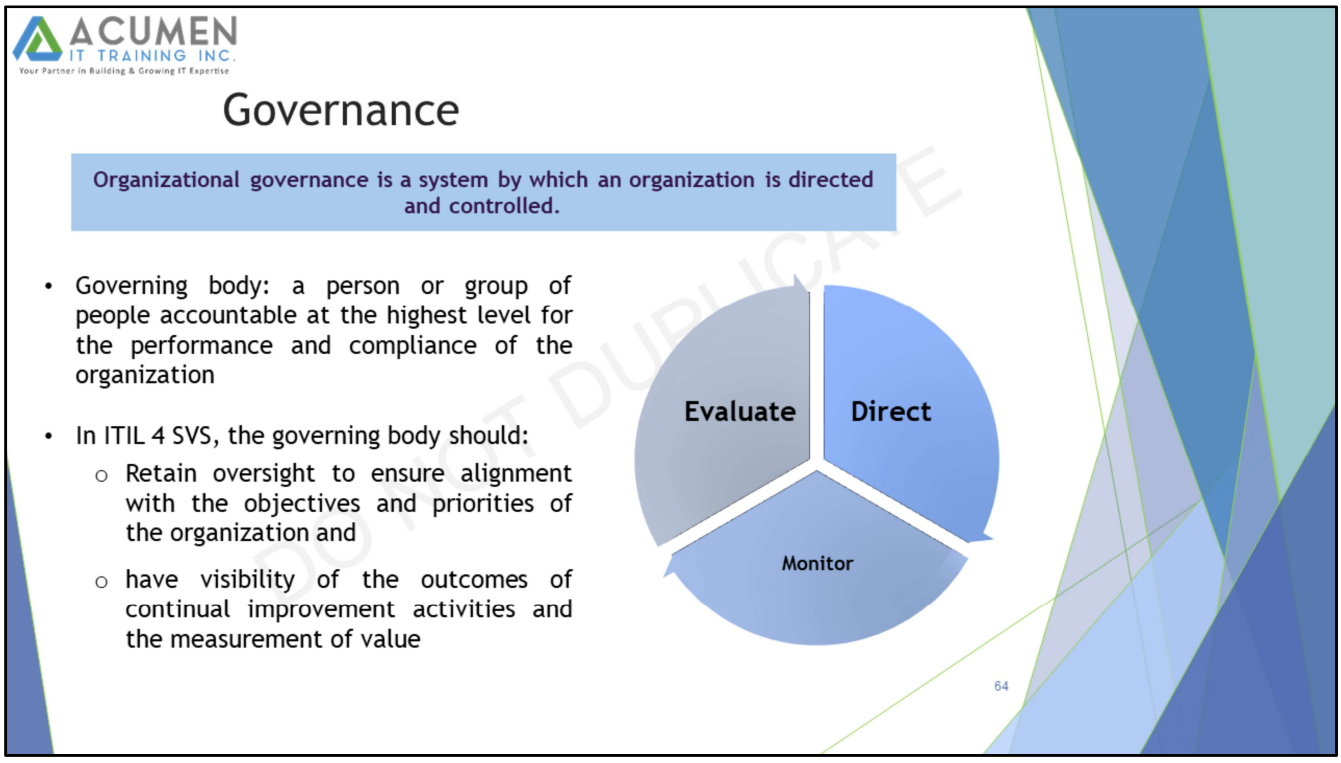
For example, if an organization is committed to progressing iteratively with feedback, it should also think and work holistically to ensure that each iteration of an improvement includes all the elements necessary to deliver real results.

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 apply together. Not all principles will be critical in every situation, but they should all be reviewed on each occasion to determine how appropriate they are.



Let us now understand the component called Governance in SVS.



Every organization is directed by a governing body, i.e. 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 any external regulations.

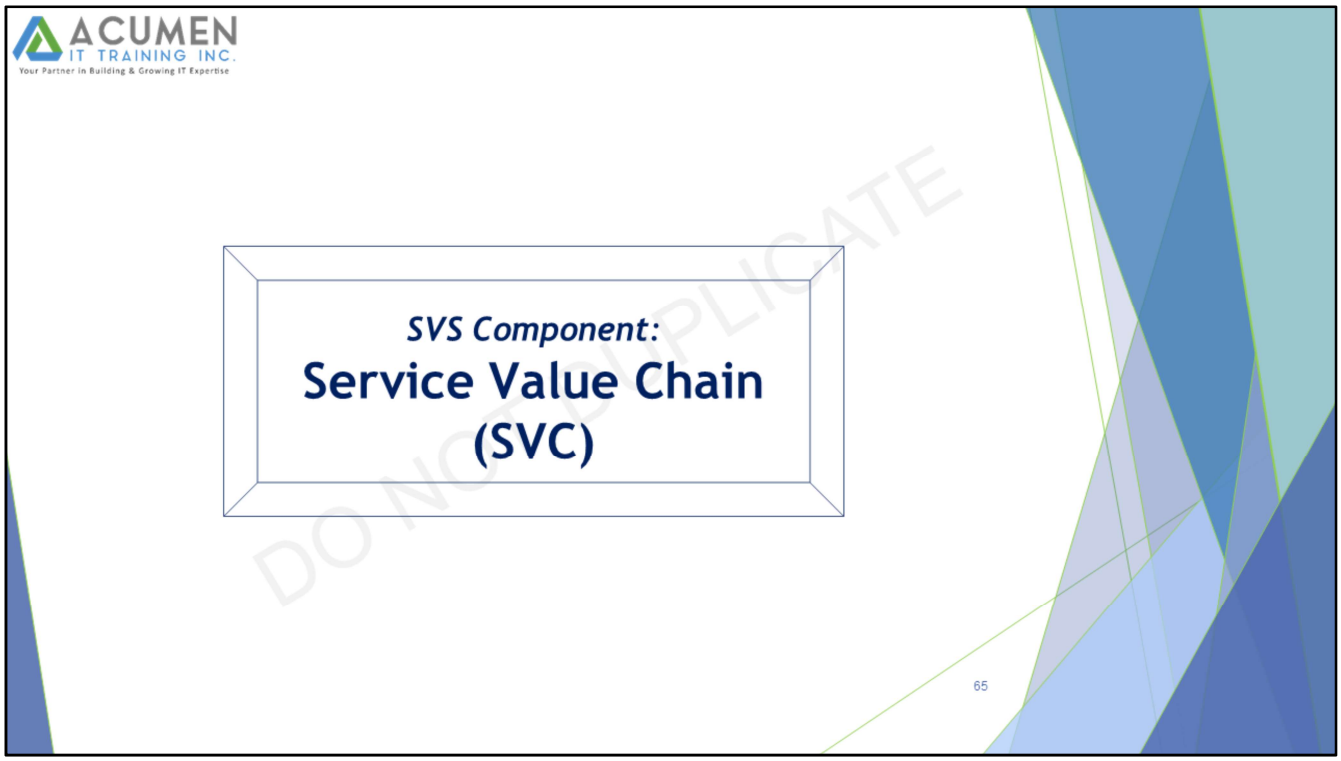
Governance is realized through the following activities:

- ***Evaluate**:* The evaluation of 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**:* The governing body assigns responsibility for, and directs the preparation and implementation of, organizational strategy and policies. Strategies set the direction and prioritization for organizational activity, future investment, etc. Policies establish the requirements for behaviour across the organization and, where relevant, suppliers, partners, and other stakeholders.
- ***Monitor**:* The governing body monitors the performance of the organization and its practices, products, and services. The purpose of this is to ensure that performance is in accordance with policies and direction.

The role and position of governance in the ITIL SVS depends on how the SVS is applied in an organization.

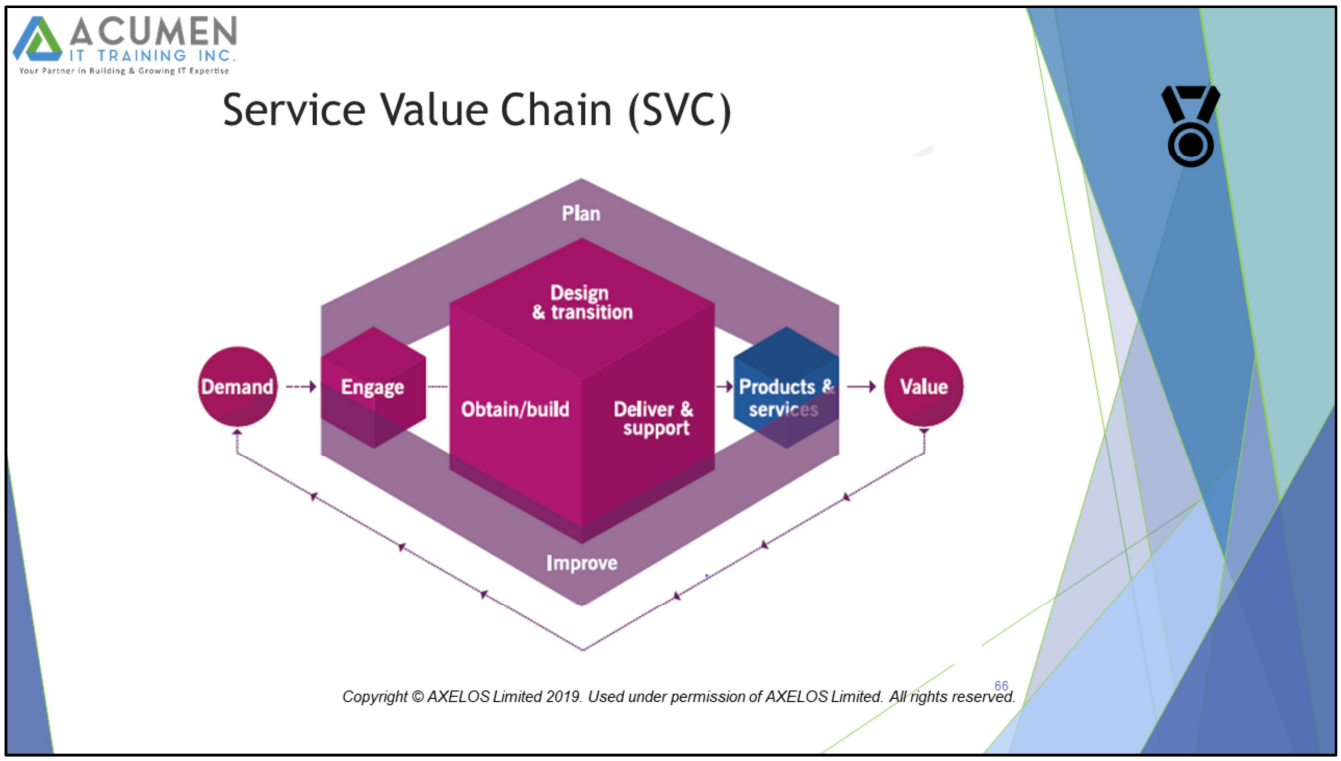
Regardless of the scope of the SVS and the positioning of the components, it is crucial to make sure that:

- the service value chain and the organization's practices work 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 SVS
- both the governing body and management at all levels maintain alignment through a clear set of shared principles and objectives
- the governance and management at all levels are continually improved to meet expectations of the stakeholders.



The **central element** of the SVS is the service value chain, an **operating model** which outlines the key activities required to respond to demand and facilitate value realization through the creation and management of products and services.

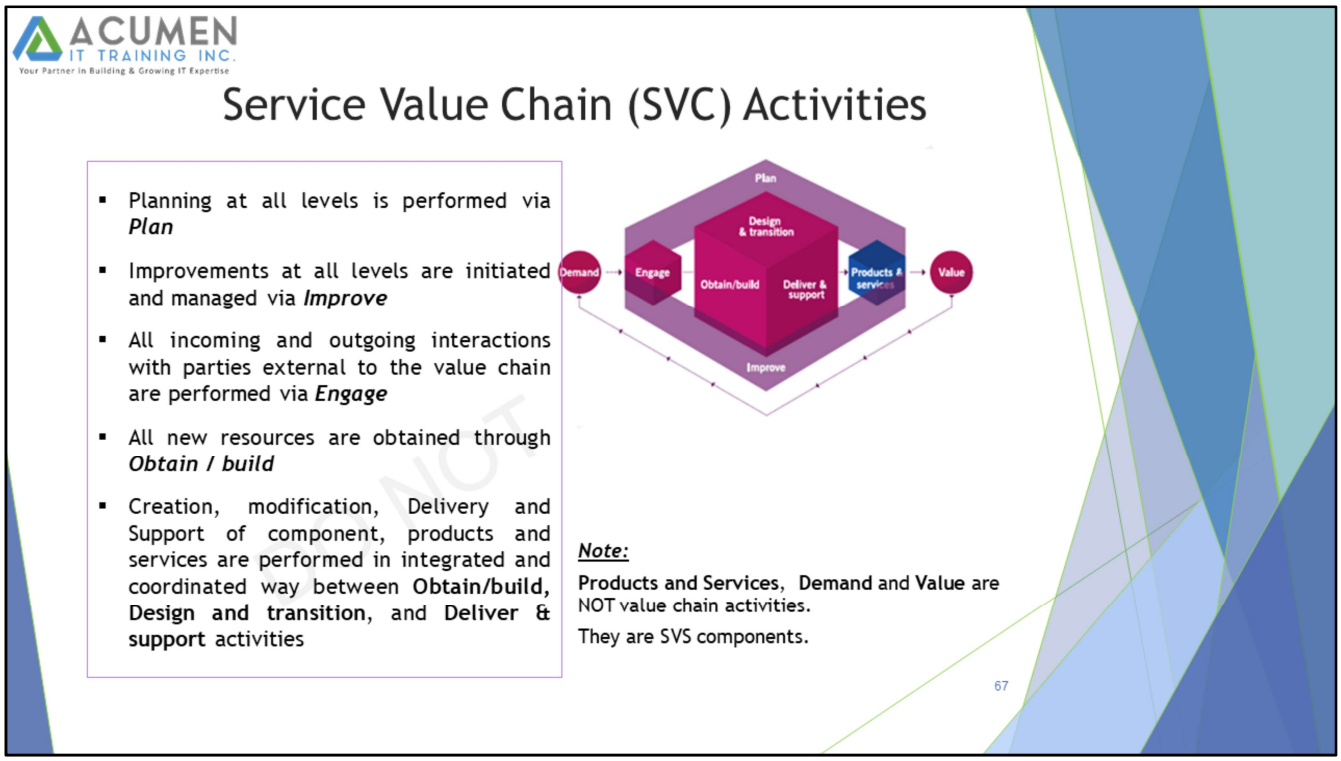
Let us now understand the activities of the service value chain, and how they interconnect and interact.



The central element of the SVS is the service value chain, an operating model which outlines the key activities required to respond to demand and facilitate value realization through the creation and management of products and services.

The SVC activities represent the steps an organization takes in the creation of value. Each activity contributes to the value chain by transforming specific inputs into outputs.

As shown in Figure above, **the ITIL service value chain includes six value chain activities which lead to the creation of products and services and, in turn, value.**

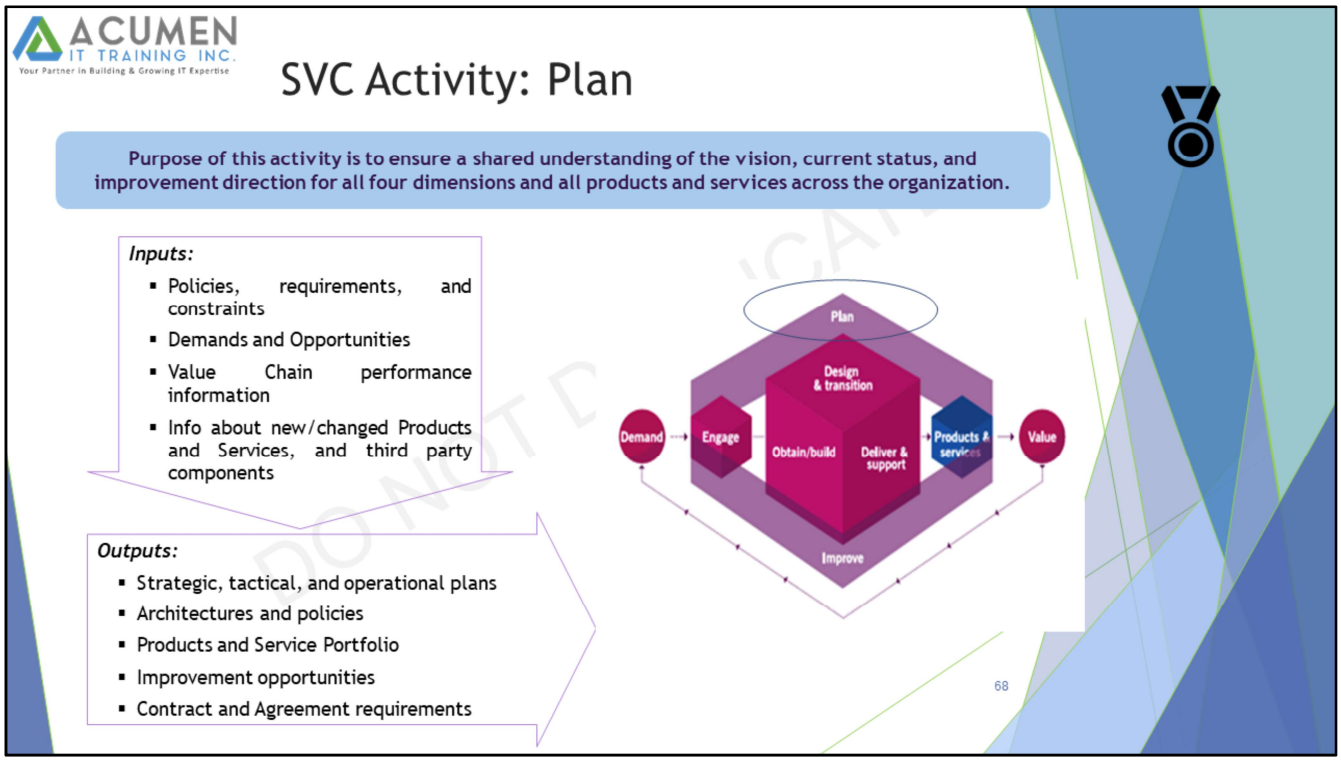


The six value chain activities are:

- **Plan**
- **Improve**
- **Engage**
- **Design and transition**
- **Obtain/build**
- **Deliver and support.**

These activities represent the steps an organization takes in the creation of value. Each activity transforms **inputs into outputs.** These inputs can be demand from outside the value chain or outputs of other activities. All the activities are interconnected, with each activity receiving and providing **triggers** for further action.

To convert inputs into outputs, the value chain activities use different combinations of ITIL practices.

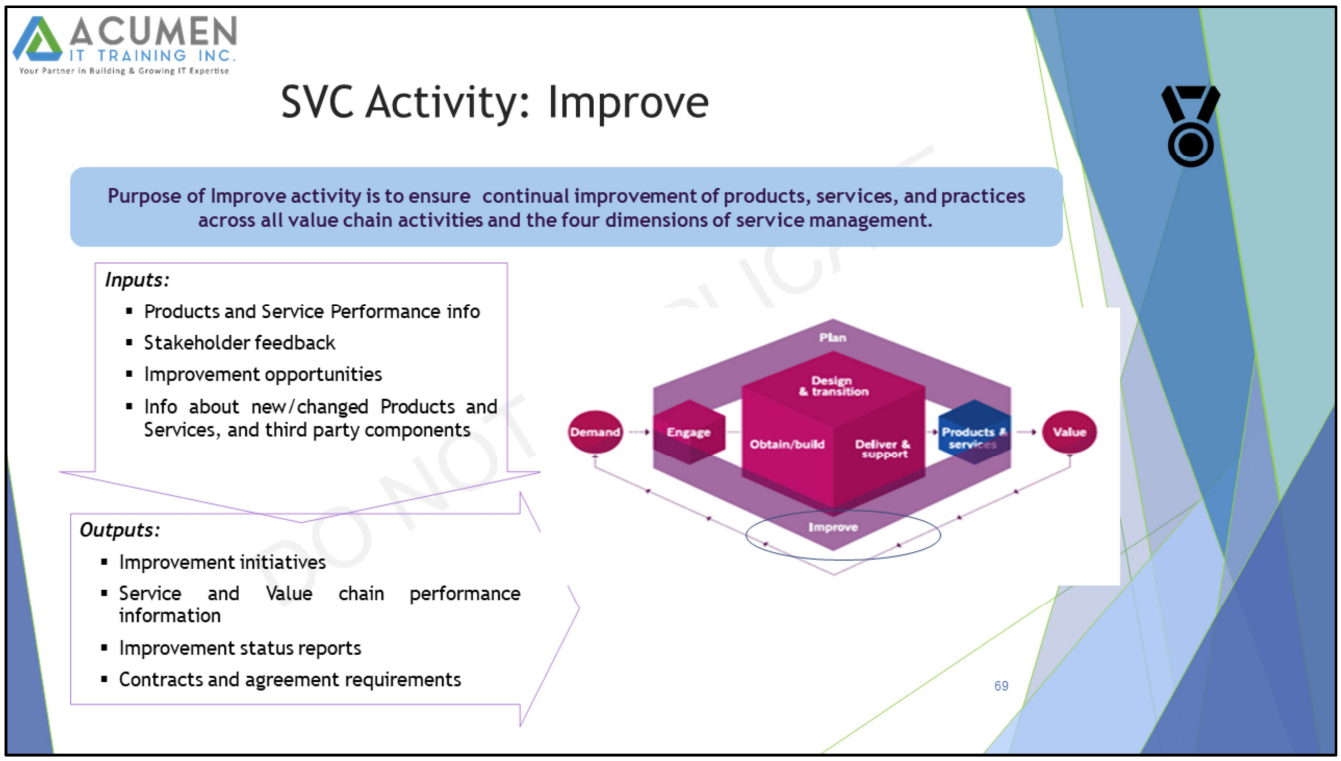


The key inputs to Plan value chain activity are:

- policies, requirements, and constraints provided by the organization's governing body
- consolidated demands and opportunities provided by engage
- value chain performance information, improvement status reports, and improvement initiatives from improve
- knowledge and information about new and changed products and services from design and transition and obtain/build
- knowledge and information about third-party service components from engage.

The key outputs of Plan value chain activity are:

- strategic, tactical, and operational plans
- portfolio decisions for design and transition
- architectures and policies for design and transition
- improvement opportunities for improve
- a product and service portfolio for engage
- contract and agreement requirements for engage.

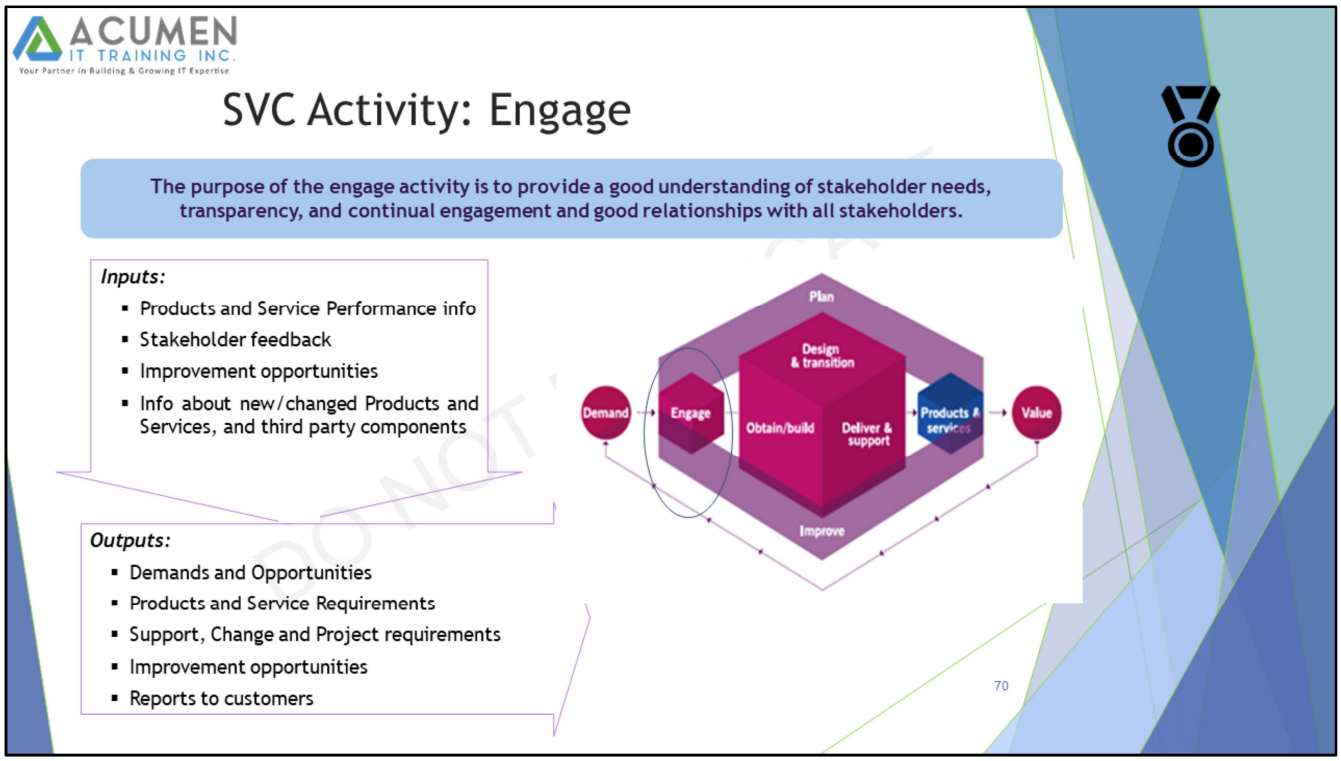


The key inputs to Improve value chain activity are:

- product and service performance information provided by deliver and support
- stakeholders' feedback provided by engage
- performance information and improvement opportunities provided by all value chain activities
- knowledge and information about new and changed products and services from design and transition and obtain/build
- knowledge and information about third-party service components from engage.

The key outputs of Improve value chain activity are:

- improvement initiatives for all value chain activities
- value chain performance information for plan and the governing body
- improvement status reports for all value chain activities
- contract and agreement requirements for engage
- service performance information for design and transition.

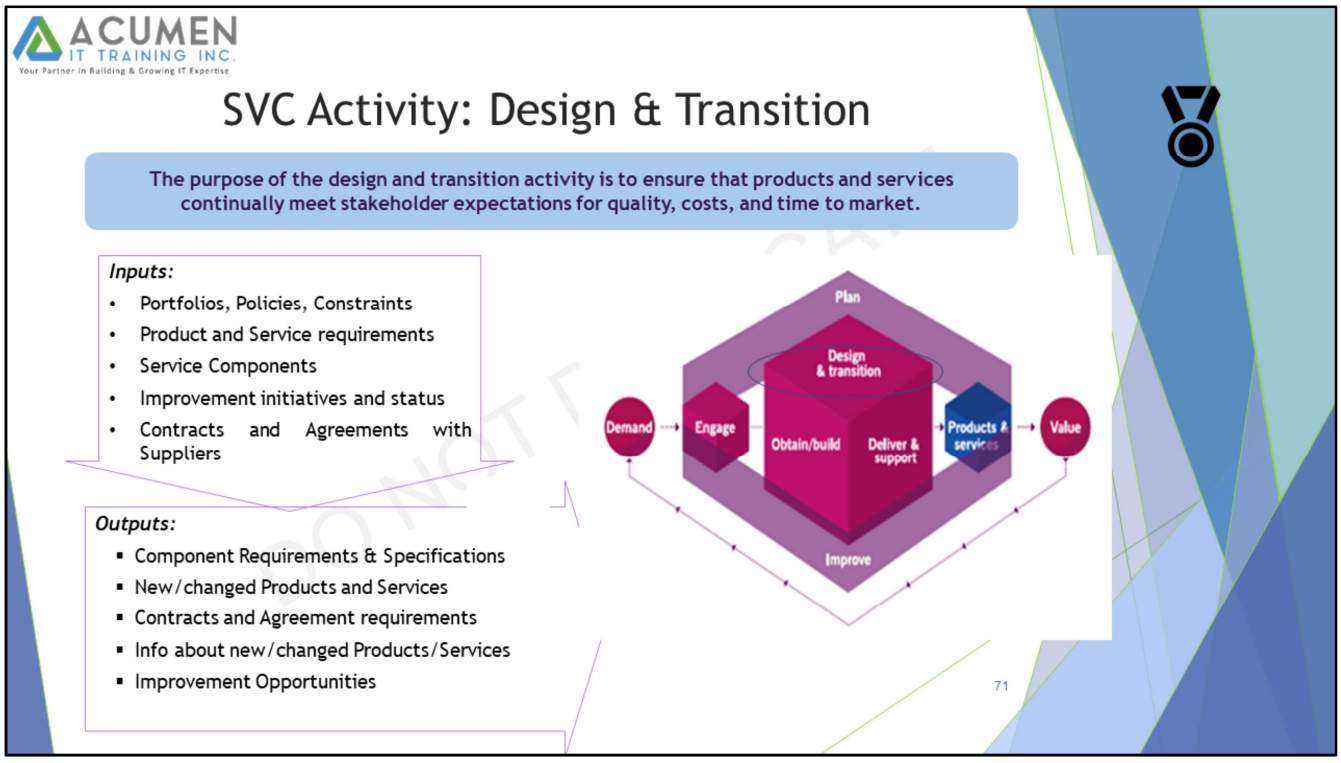


The key inputs to Engage value chain activity are:

- product and service portfolio provided by plan
- high-level demand for services and products provided by internal and external customers
- detailed requirements for services and products provided by customers
- requests and feedback from customers
- incidents, service requests, and feedback from users
- information on the completion of user support tasks from deliver and support
- marketing opportunities from current and potential customers and users
- cooperation opportunities and feedback provided by partners and suppliers
- contract and agreement requirements from all value chain activities
- knowledge and information about new and changed products and services from design and transition and obtain/build
- knowledge and information about third-party service components from suppliers and partners
- product and service performance information from deliver and support
- improvement initiatives from improve
- improvement status reports from improve.

The key outputs of Engage value chain activity are:

- consolidated demands and opportunities for plan
- product and service requirements for design and transition
- user support tasks for deliver and support
- improvement opportunities and stakeholders' feedback for improve
- change or project initiation requests for obtain/build
- contracts and agreements with external and internal suppliers and partners for design and transition, and obtain/build
- knowledge and information about third-party service components for all value chain activities
- service performance reports for customers.

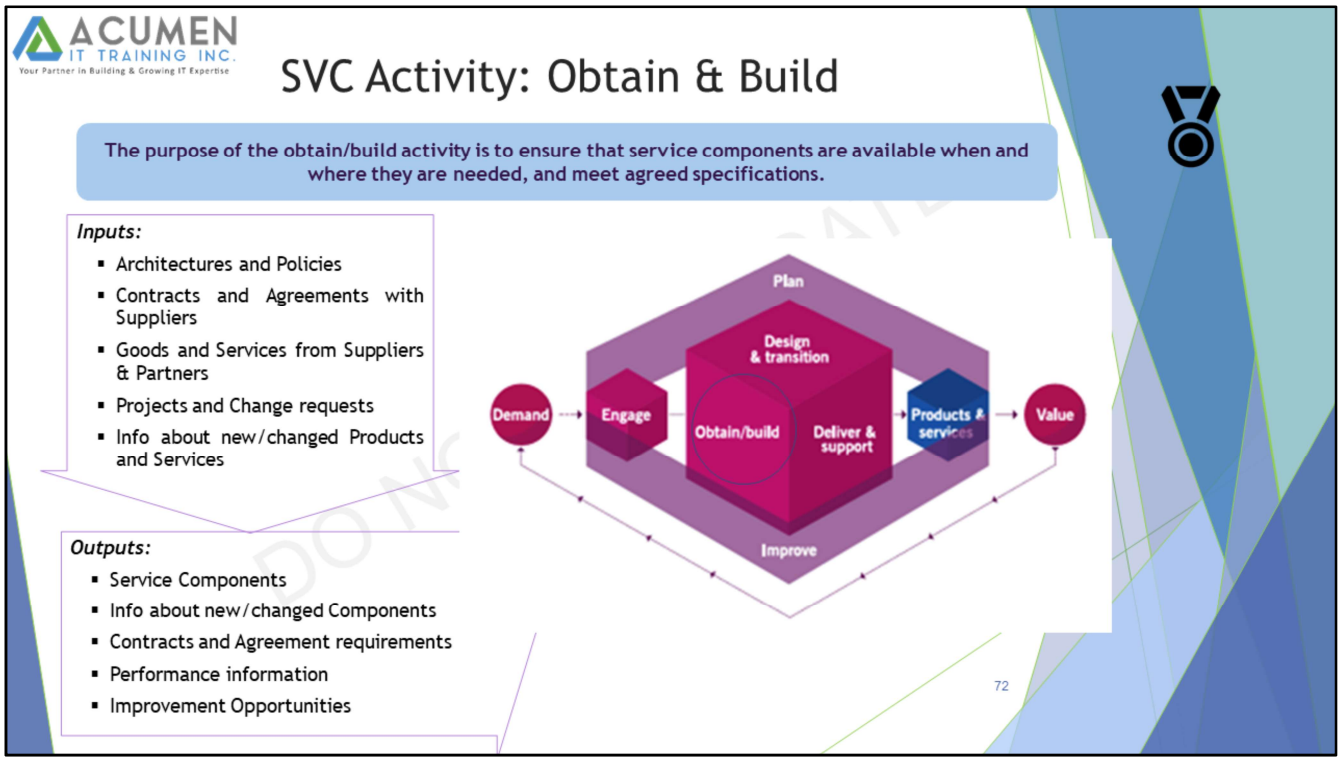


The key inputs to Design and Transition value chain activity are:

- portfolio decisions provided by plan
- architectures and policies provided by plan
- product and service requirements provided by engage
- improvement initiatives provided by improve
- improvement status reports from improve
- service performance information provided by deliver and support, and improve
- service components from obtain/build
- knowledge and information about third-party service components from engage
- knowledge and information about new and changed products and services from obtain/build
- contracts and agreements with external and internal suppliers and partners provided by engage.

The key outputs of Design and Transition value chain activity are:

- requirements and specifications for obtain/build
- contract and agreement requirements for engage
- new and changed products and services for deliver and support
- knowledge and information about new and changed products and services to all value chain activities
- performance information and improvement opportunities for improve.

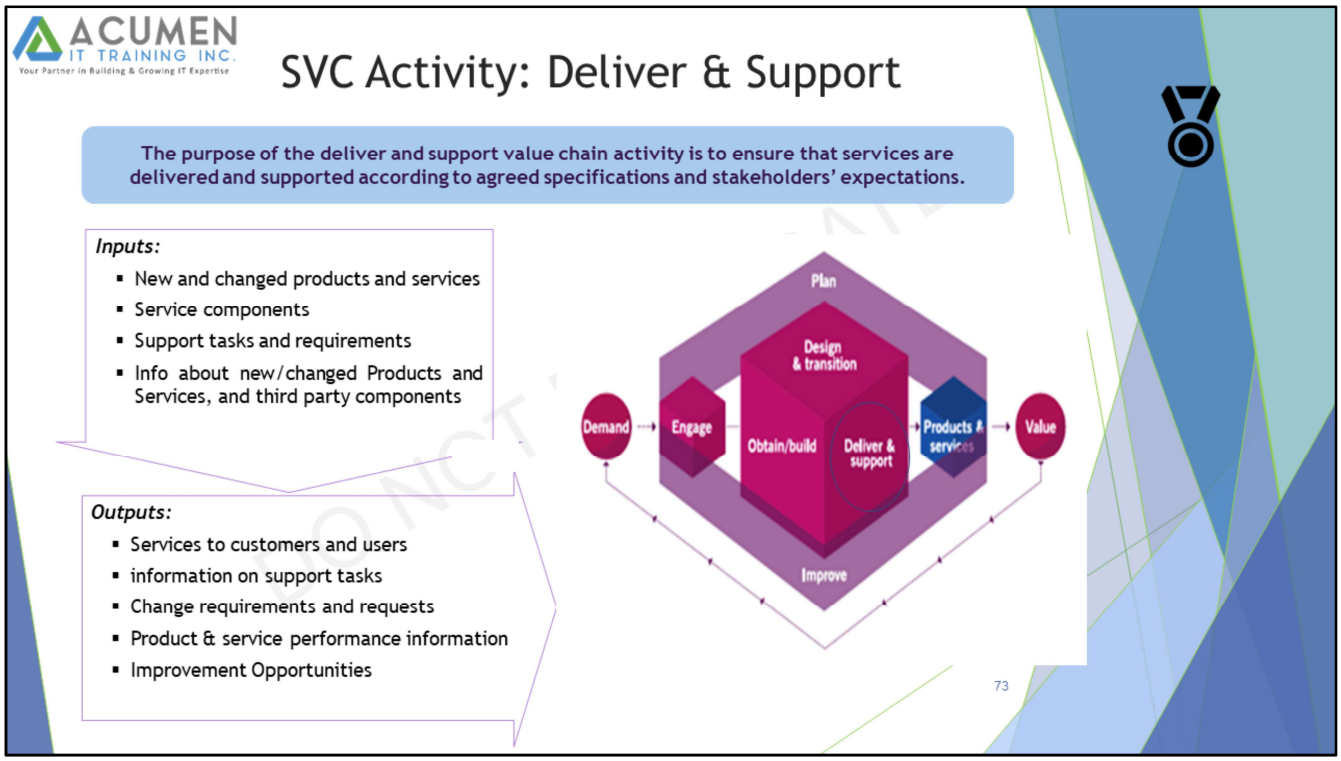


The key inputs to Obtain/Build value chain activity are:

- architectures and policies provided by plan
- contracts and agreements with external and internal suppliers and partners provided by engage
- goods and services provided by external and internal suppliers and partners
- requirements and specifications provided by design and transition
- improvement initiatives provided by improve
- improvement status reports from improve
- change or project initiation requests provided by engage
- change requests provided by deliver and support
- knowledge and information about new and changed products and services from design and transition
- knowledge and information about third-party service components from engage.

The key outputs of Obtain/Build value chain activity are:

- service components for deliver and support
- service components for design and transition
- knowledge and information about new and changed service components to all value chain activities
- contract and agreement requirements for engage
- performance information and improvement opportunities for improve.

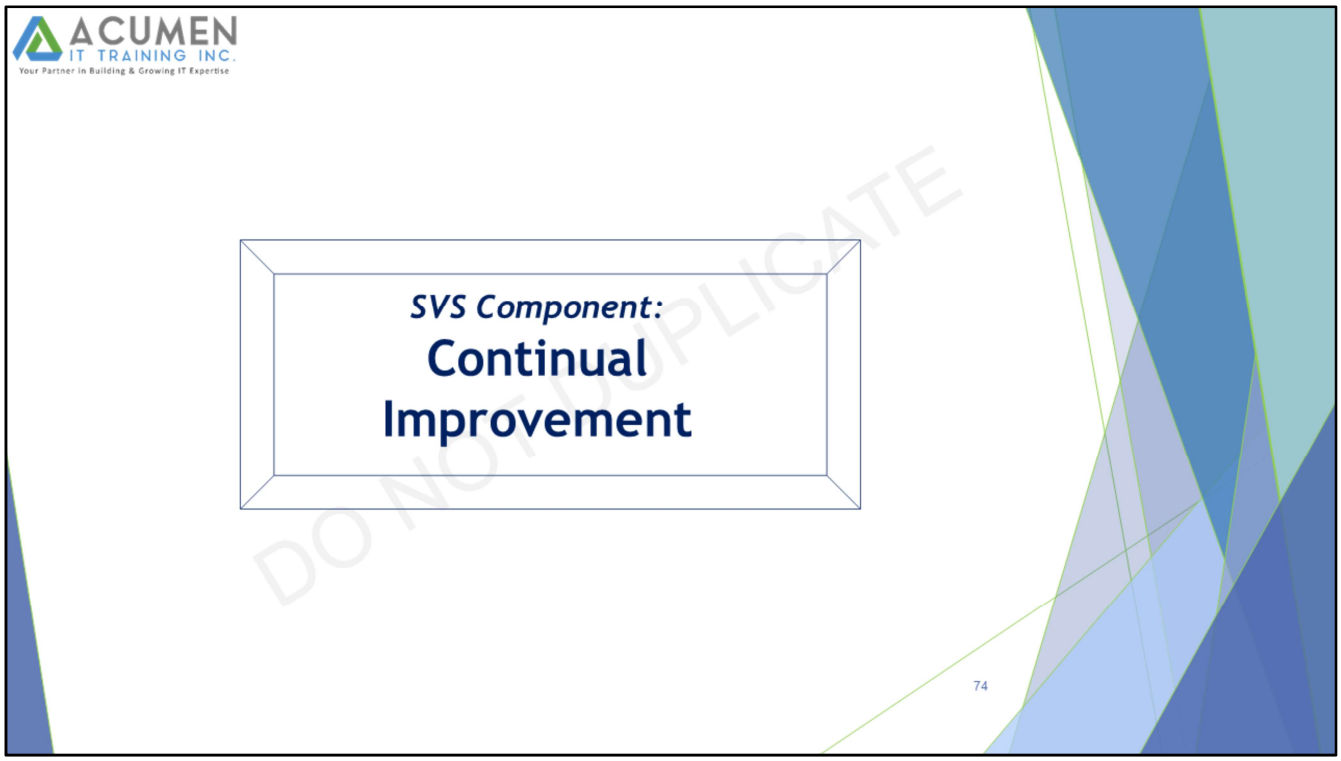


The key inputs to Deliver and Support value chain activity are:

- new and changed products and services provided by design and transition
- service components provided by obtain/build
- improvement initiatives provided by improve
- improvement status reports from improve
- user support tasks provided by engage
- knowledge and information about new and changed service components and services from design and transition, and obtain/build
- knowledge and information about third-party service components from engage.

The key outputs of Obtain/Build value chain activity are:

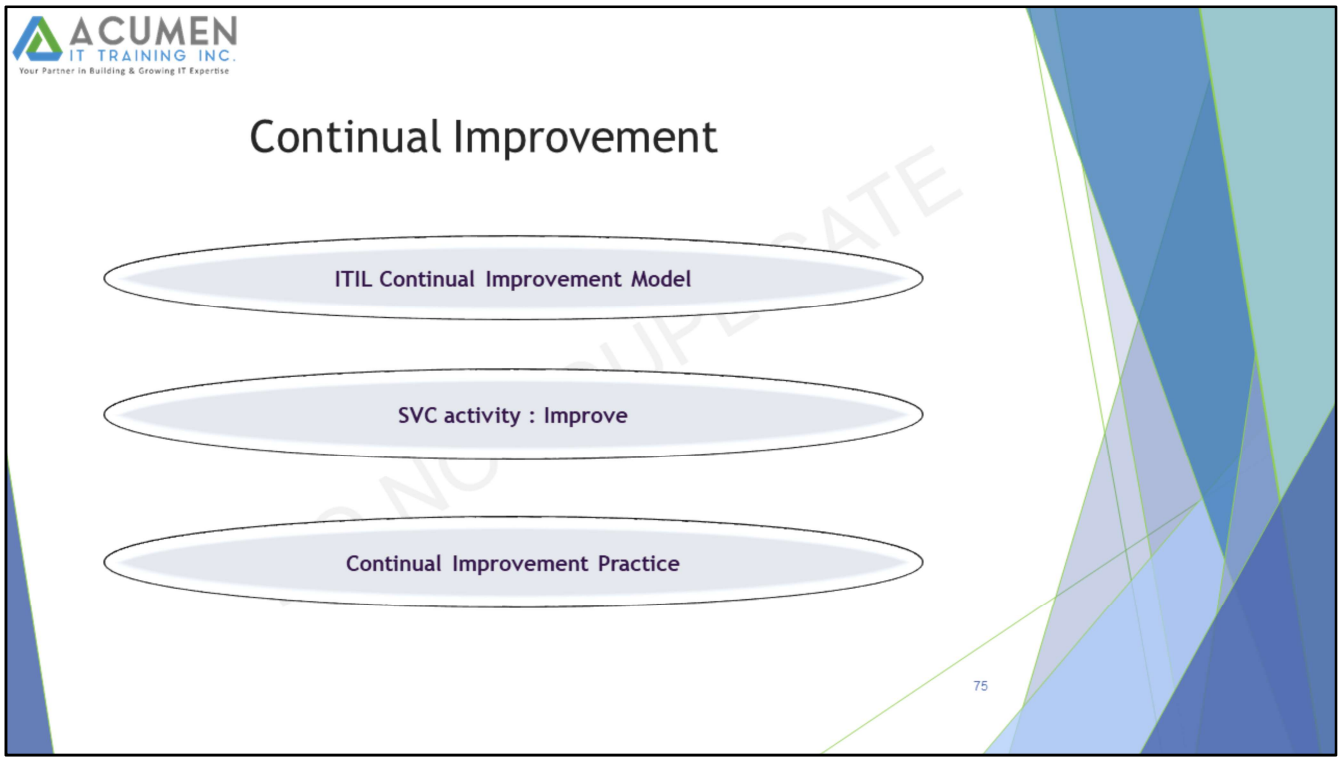
- services delivered to customers and users
- information on the completion of user support tasks for engage
- product and service performance information for engage and improve
- improvement opportunities for improve
- contract and agreement requirements for engage
- change requests for obtain/build
- service performance information for design and transition.



Continual improvement takes place in all areas of the organization and at all levels, from strategic to operational.

The continual improvement model applies to the SVS in its entirety, as well as to all of the organization's products, services, service components, and relationships.

Let us understand the tenets of continual improvement in the context of ITIL 4 framework.



The continual improvement model applies to the SVS in its entirety, as well as to all of the organization's products, services, service components, and relationships.

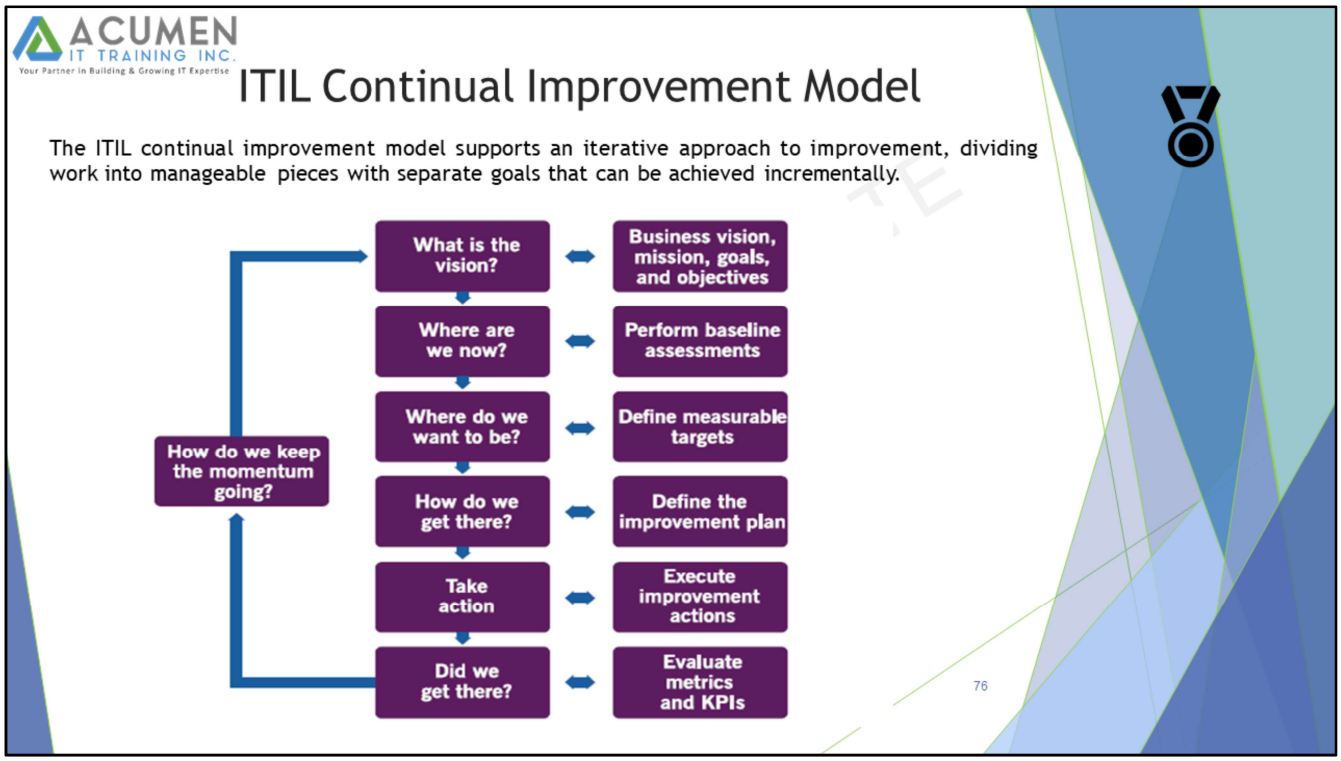
To support continual improvement at all levels, the ITIL SVS includes:

- **the ITIL continual improvement model, which provides organizations with a structured approach to implementing improvements**
- **the improve service value chain activity, which embeds continual improvement into the value chain**
- **the continual improvement practice, supporting organizations in their day-to-day improvement efforts.**

We will discuss the ITIL Continual improvement Model in this section.

We have already discussed the Improve activity under the SVC in the previous Section.

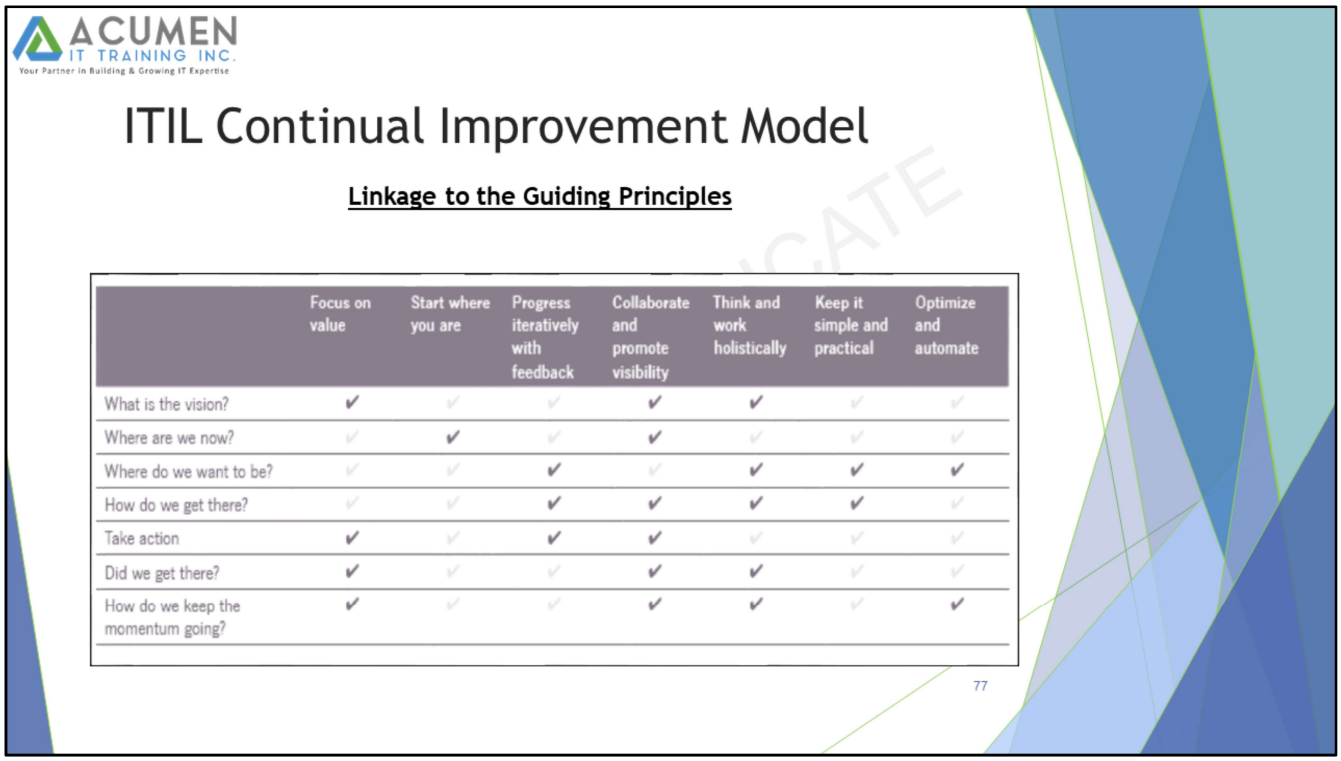
The Continual Improvement Activity is included in the later, Practices Section.



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 ITSM initiatives will be successful, puts a strong focus on customer value, and ensures that improvement efforts can be linked back to the organization's vision. The model supports an iterative approach to improvement, dividing work into manageable pieces with separate goals that can be achieved incrementally.

The Continual Improvement Model of ITIL is shown above. It contains the following 7 steps:

- Step 1: 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.
- Step 2: A key element in this step is a current state assessment. The success of an improvement initiative depends on a clear and accurate understanding of the starting point and the impact of the initiative.
- Step 3:This outlines what Point B, the target state for the next step of the journey, should look like. A journey cannot be mapped out if the destination is not clear.
- Step 4: The plan for the initiative can be a straightforward and direct route to completing a single simple improvement, or it may be more involved.
- Step 5: The plan for the improvement is acted upon. This could involve a traditional waterfall-style approach, but it could be more appropriate to follow an Agile approach by experimenting, iterating, changing directions, or even going back to previous steps.
- Step 6: This step involves checking the destination of the journey to be sure that the desired point has been reached.
- Step 7: If the improvement has delivered the expected value, the focus of the initiative should shift to marketing these successes and reinforcing any new methods introduced.



	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
What is the vision?	✔			✔	✔		
Where are we now?		✔		✔			
Where do we want to be?			✔		✔	✔	✔
How do we get there?			✔	✔	✔	✔	
Take action	✔		✔	✔			
Did we get there?	✔			✔	✔		
How do we keep the momentum going?	✔			✔	✔		✔

Consider this explanation of relating Continual improvement and the theory of constraints:

In an increasingly dynamic business environment, an enterprise's ability to change quickly, whether in response to external factors or to disrupt the market, can make the difference between failure and success.

When planning improvements, it is crucial to focus on the work that is the highest priority. According to the theory of constraints (ToC), the weakest link in the value chain determines the flow and throughput of the system.

The weakest link of a value stream can be determined with value stream mapping.

This is a Lean practice that examines the stream, quantifies its waste (for example, a delay), and in so doing, identifies its weakest link.

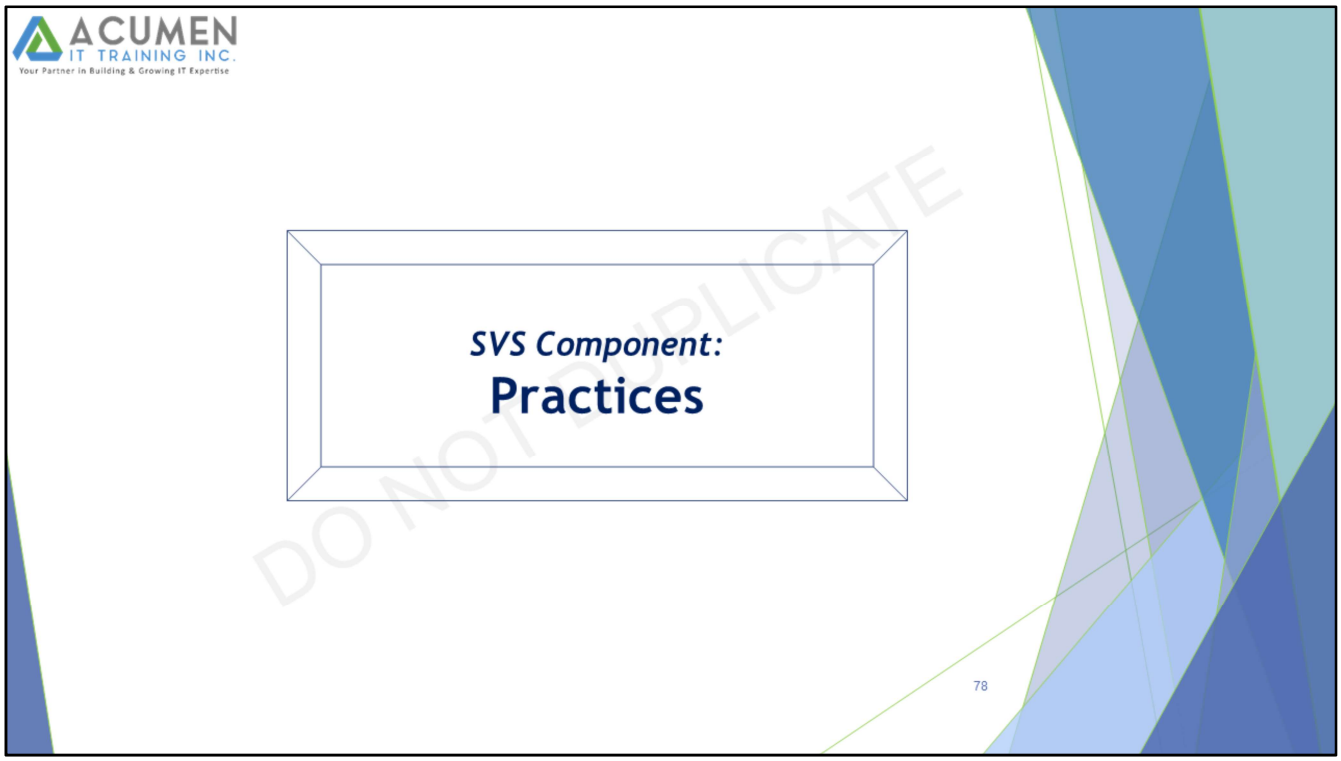
If the weakest link is the development of information systems, then the application of Agile principles and practices can improve the quality of, and the speed with which, functionality is developed.

The ITIL 4 practices that help with this include, software development and management, business analysis, and relationship management.

If the weakest link is the speed and reliability of deployment, then using DevOps principles, technical practices and tools can make a significant difference.

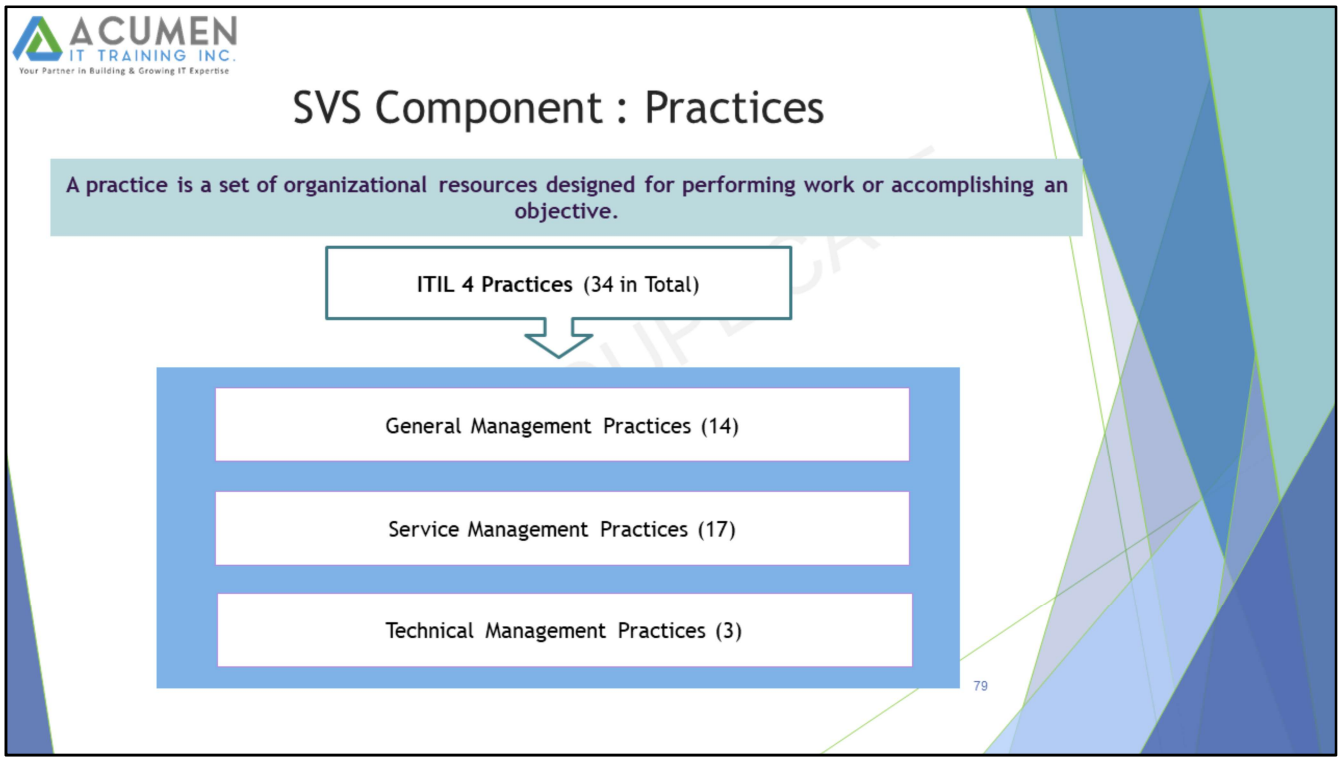
The ITIL 4 practices that are relevant to this include deployment management, release management, and organizational change management.

Finally, if the weakest link is the delivery and support of IT services, then IT operations practices and tools can be used, such as the ITIL 4 practices of incident management, problem management, service desk, and infrastructure and platform management.



The ITIL SVS includes Practices (34 practices in total) segregated into: general management, service management, and technical management practices

Let us examine their purpose and role in the service value chain.



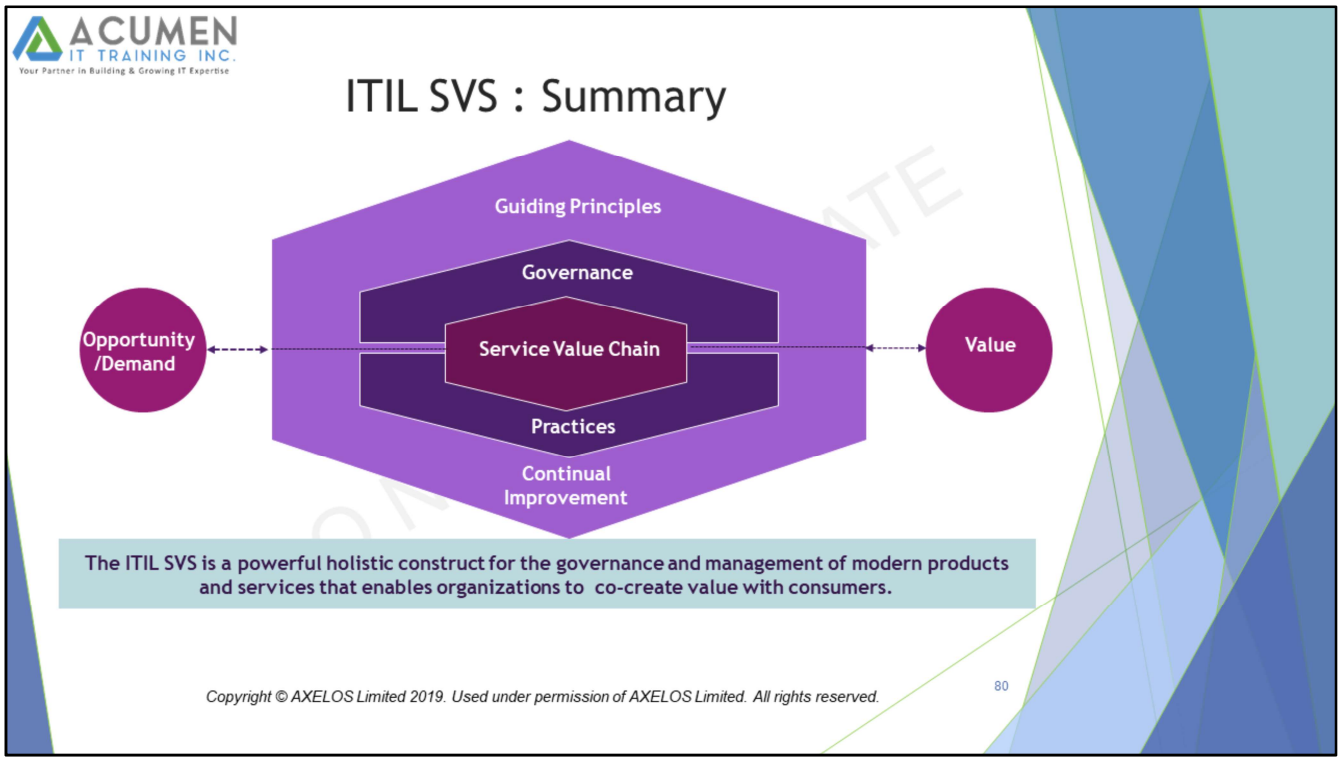
The ITIL SVS includes a total of 34 designated Practices which are divided into:

- **14 general management practices,**
- **17 service management practices, and**
- **3 technical management practices**

All these practices are subject to the four dimensions of service management.

The segregation of these practices are from the following perspectives:

- ***General management practices* have been adopted and adapted for service management from general business management domains.**
- ***Service management practices* have been developed in service management and ITSM industries.**
- ***Technical management practices* have been adapted from technology management domains.**



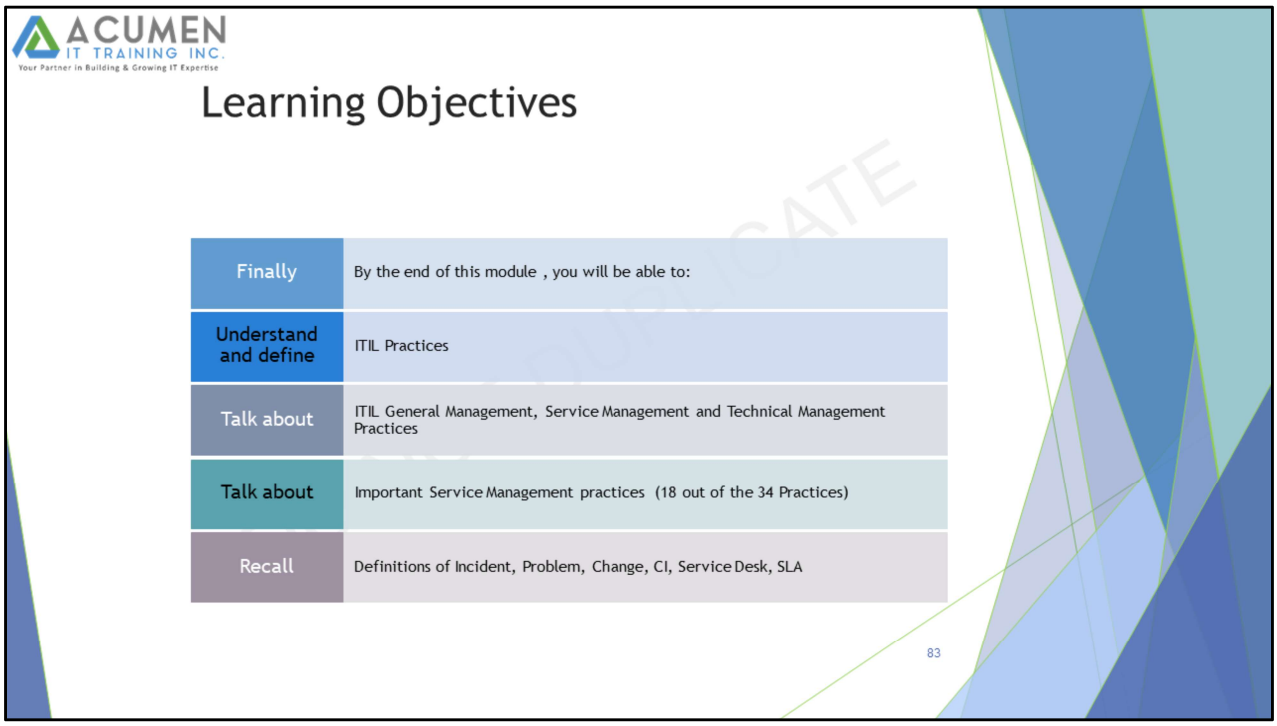
The ITIL Service Value System (SVS) describes how all the components and activities of the organization work together as a system to enable value creation.

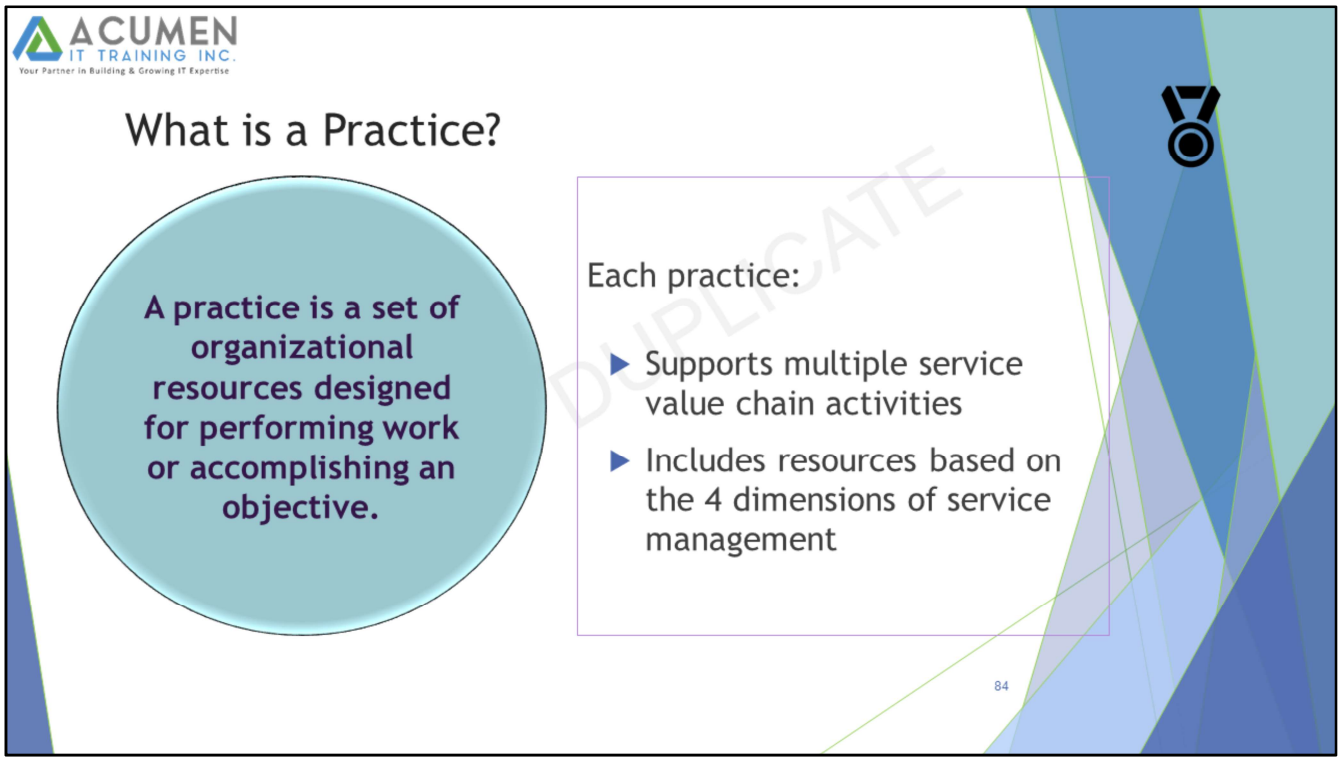
Each organization's SVS has interfaces with other organizations, forming an ecosystem that facilitates value creation for the organizations, their customers, and other stakeholders.

Every organization participates in some form of the value chain activities described here, even when many of them are performed by suppliers and partners.

ITIL 4 guidance can be adapted and adopted to facilitate value, feedback, and continual improvement across the SVS.

Let us now have a look at the Management Practices included in ITIL 4.

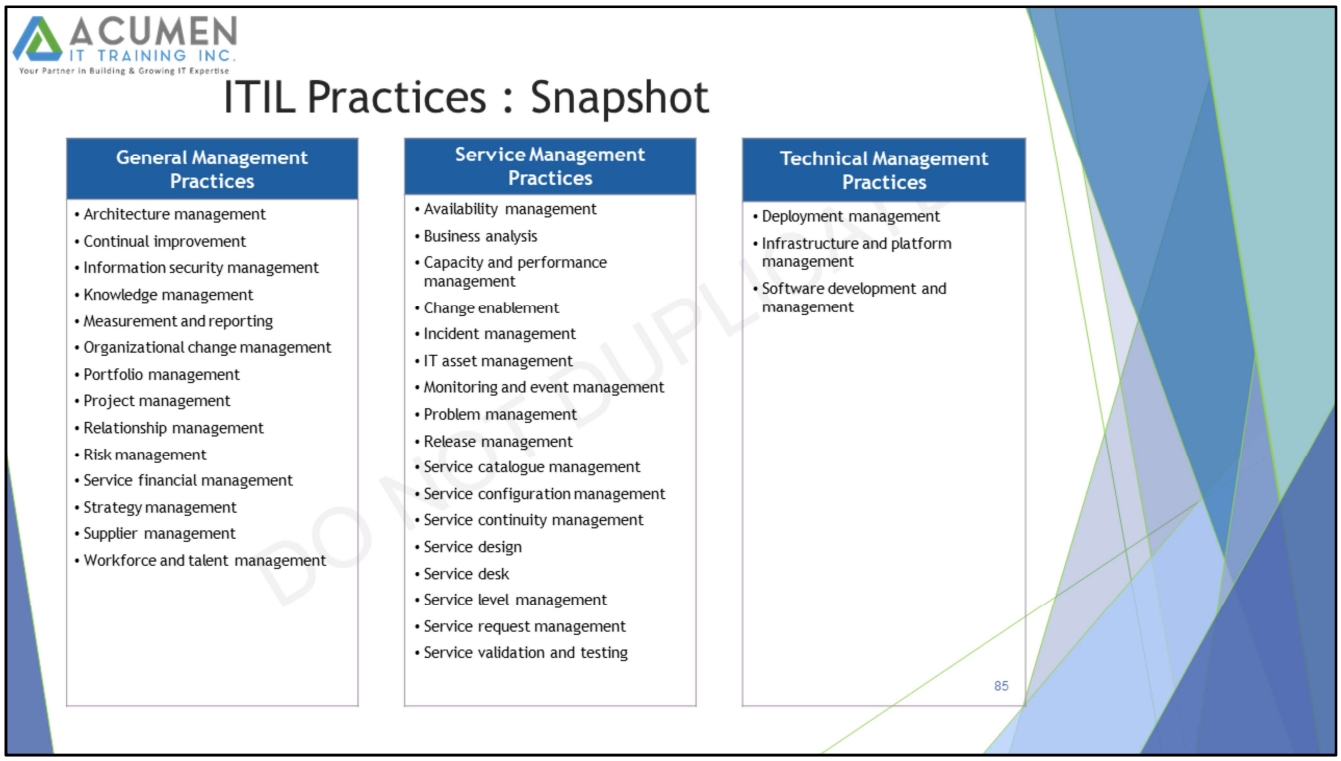




In ITIL, a management practice is a set of organizational resources designed for performing work or accomplishing an objective.

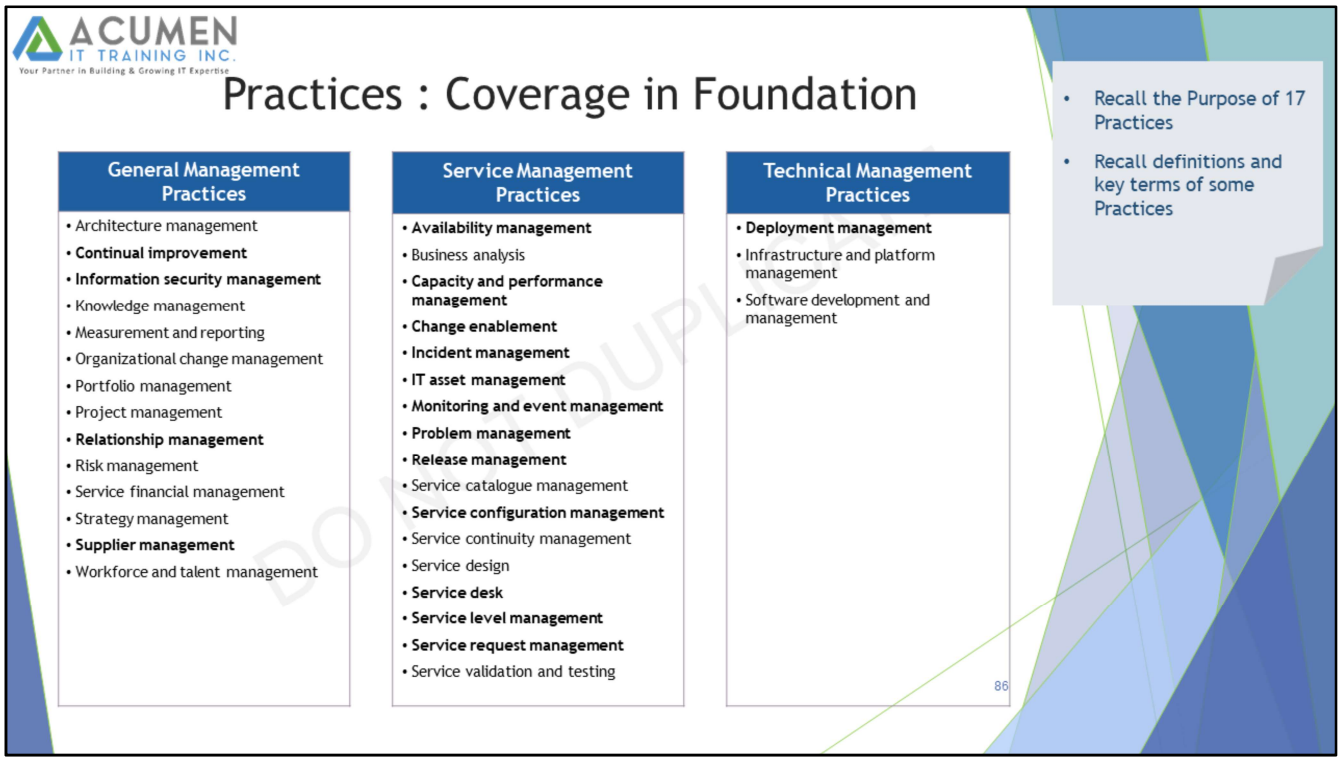
The origins of the practices are as follows:

- **General management practices have been adopted and adapted for service management from general business management domains.**
- **Service management practices have been developed in service management and ITSM industries.**
- **Technical management practices have been adapted from technology management domains for service management purposes by expanding or shifting their focus from technology solutions to IT services.**



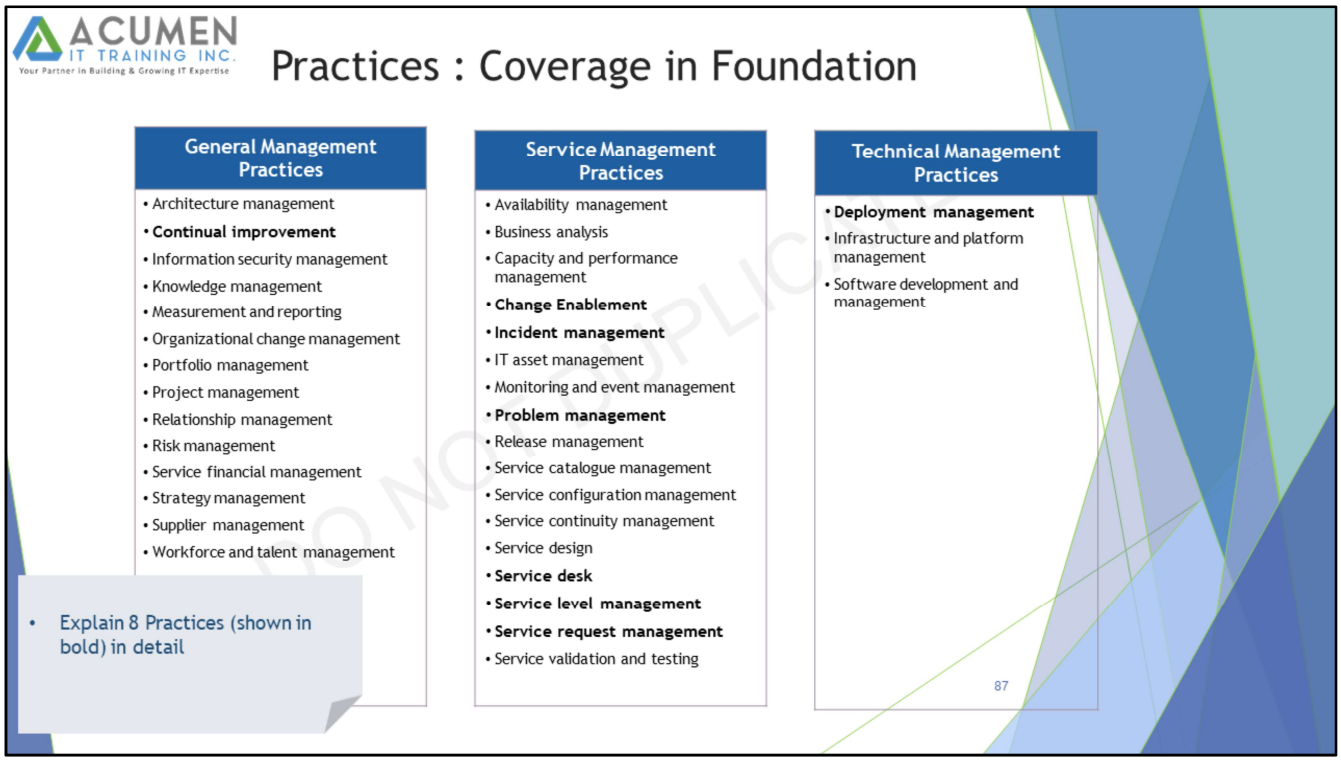
The 34 ITIL management practices are listed in Table as shown above.

There are 14 general management practices, 17 service management practices, and three technical management practices.



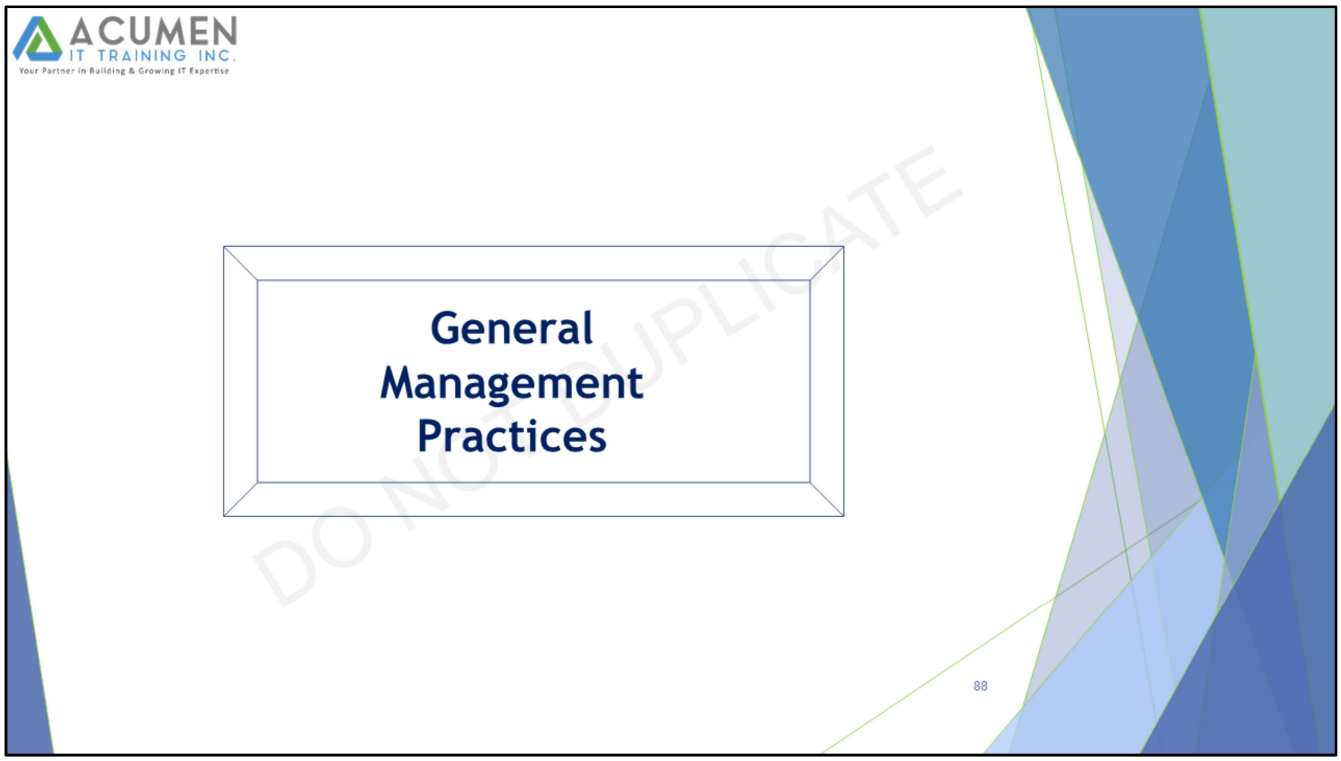
Out of the total 34 ITIL management practices, 17 of them marked in bold are the ones we will be seeing in the ITIL foundation level.

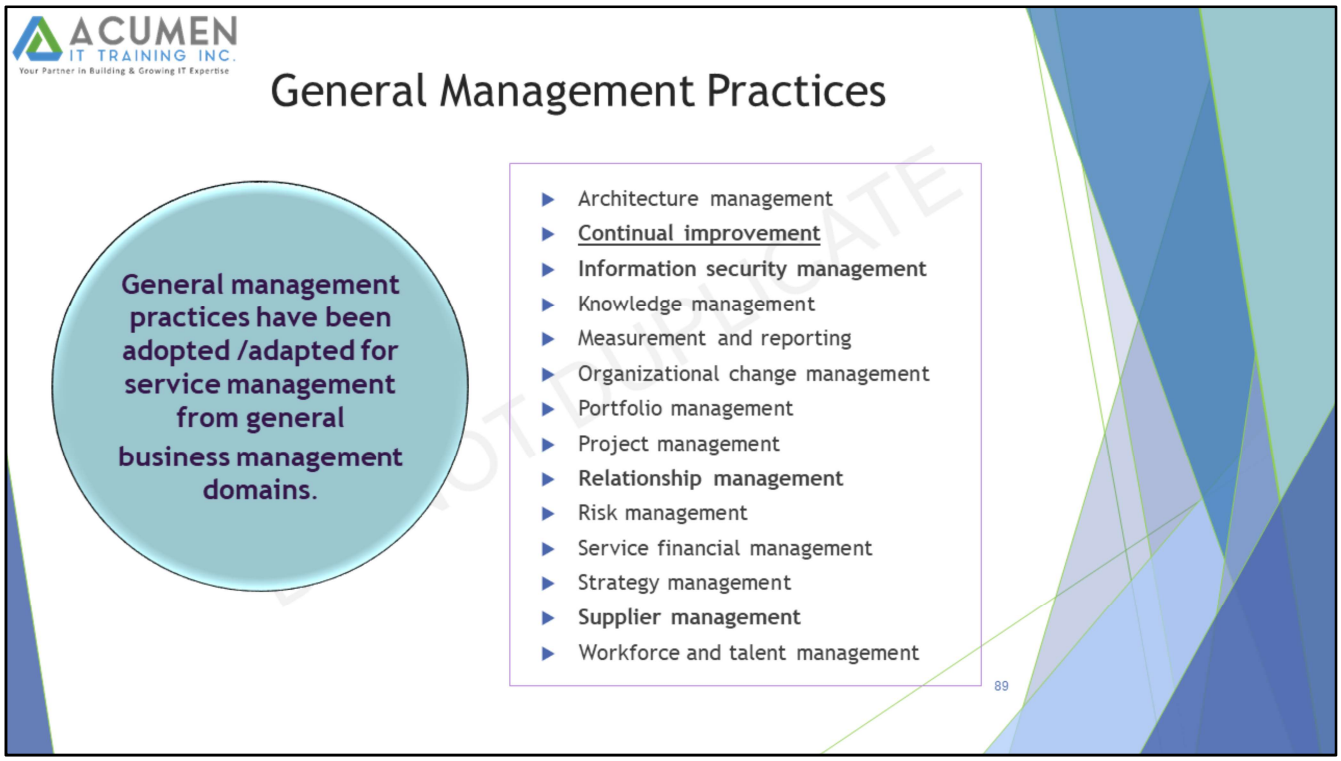
The participants for ITIL foundation level are expected to recall the purpose of these 15 practices, and some key terms and definitions including Availability, IT Asset, Event, Configuration Item, Change, Incident, Problem, Known error etc.



8 Key practices are discussed in more detail at the foundation level, which are:

- Continual Improvement
- Change Enablement
- Incident Management
- Problem Management
- Service Desk
- Service Level Management
- Service Request Management
- Deployment Management





From the 14 General management practices, at foundation level, we will be examining:

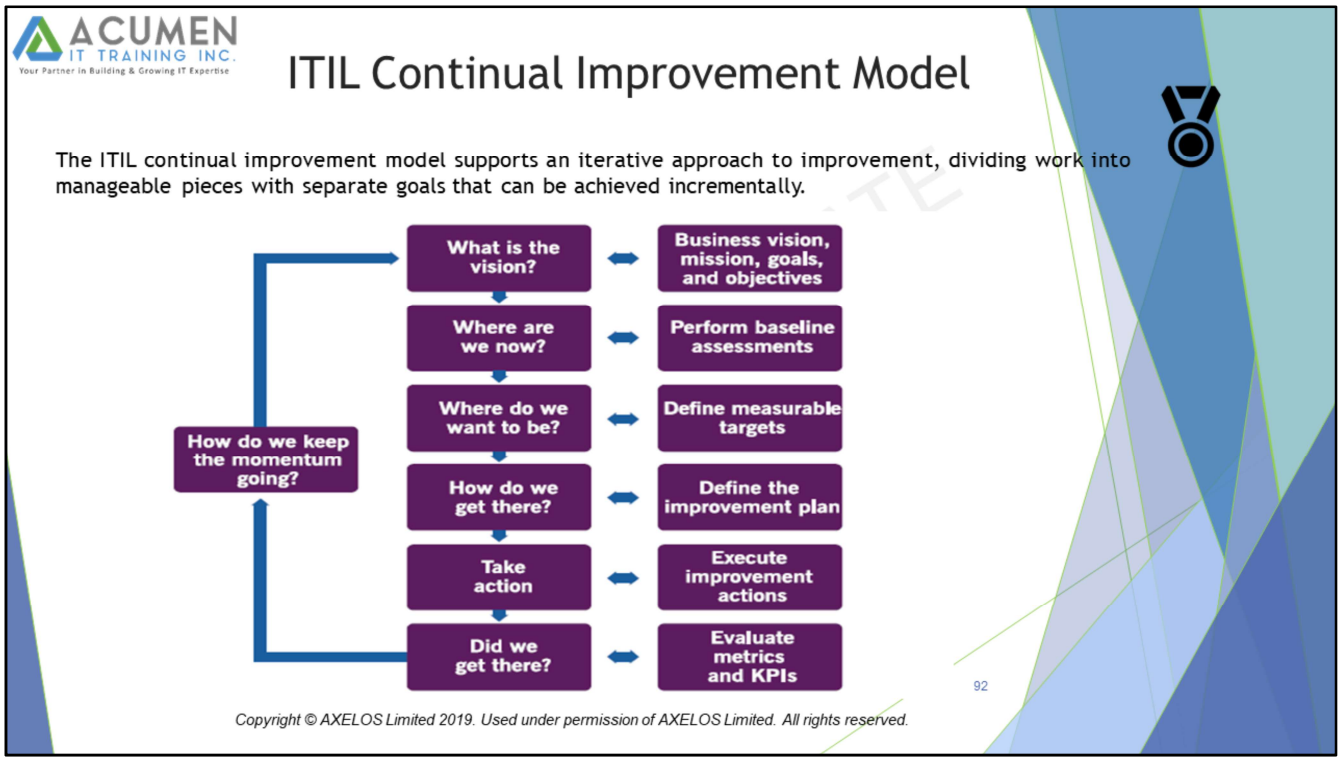
- Purpose of the four practices marked in BOLD as well as
- Continual Improvement practice (marked in bold and underlined) in detail.

Included in the scope of the continual improvement practice is the development of improvement-related methods and techniques and the propagation of a continual improvement culture across the organization, in alignment with the organization's overall strategy.

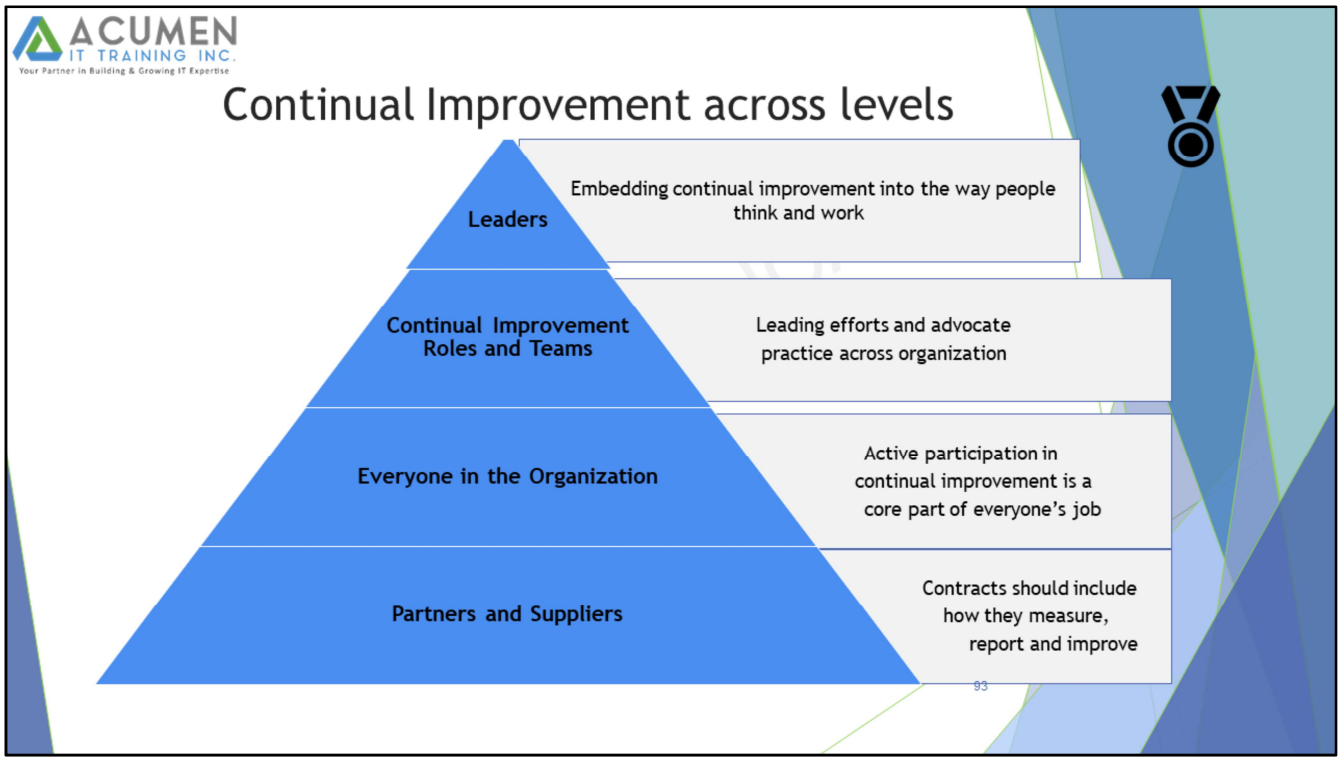
The commitment to and practice of continual improvement must be embedded into every fibre of the organization. If it is not, there is a real risk that daily operational concerns and major project work will eclipse continual improvement efforts.

Key activities that are part of continual improvement practices are shown above.

There are many methods, models, and techniques that can be employed for making improvements. **The ITIL SVS includes the continual improvement model which can be applied to any type of improvement, from high-level organizational changes to individual services and configuration items (CIs).**



The ITIL SVS includes the continual improvement model (see Figure 4.3), which can be applied to any type of improvement, from high-level organizational changes to individual services and configuration items (CIs). The model was described in an earlier section.



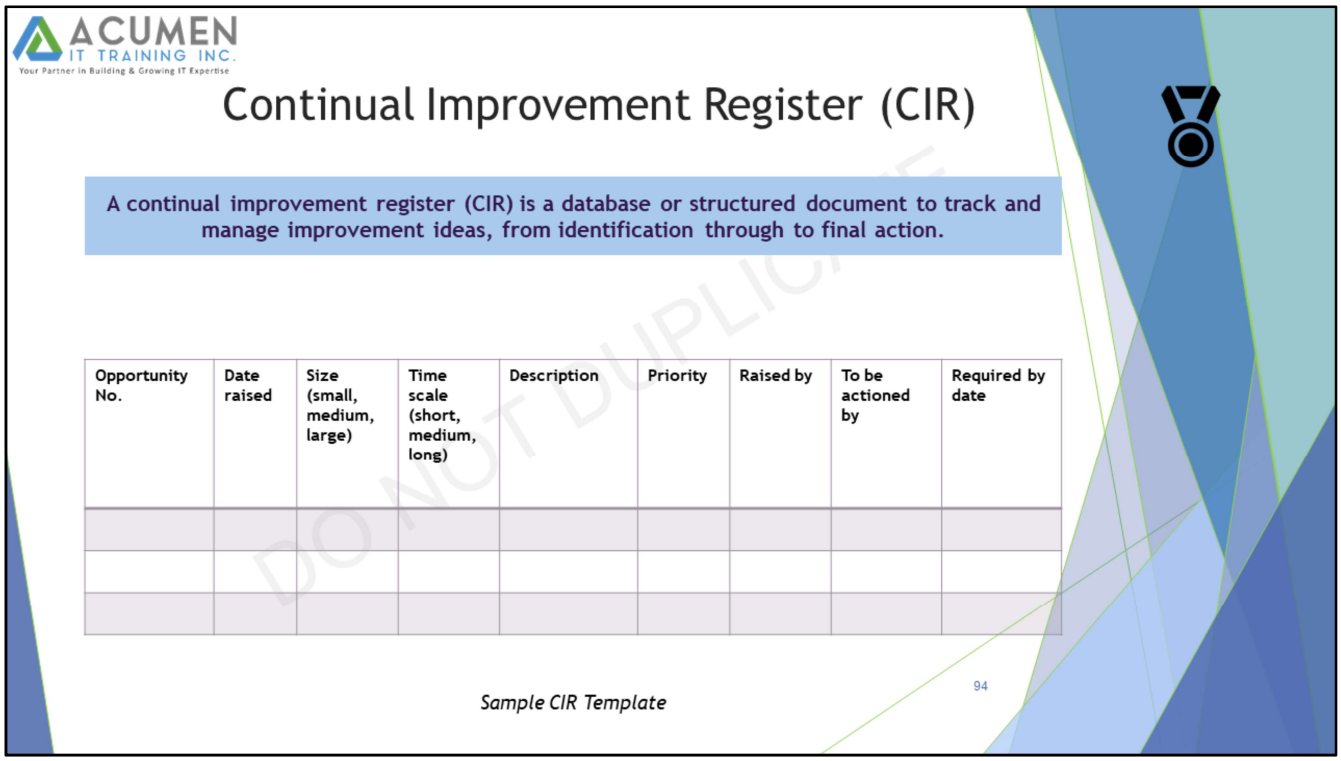
Above diagram represents the roles in continual improvement at various levels in an organization.

Continual improvement is everyone's responsibility. Although there may be a group of staff members who focus on this work full-time, it is critical that everyone in the organization understands that active participation in continual improvement activities is a core part of their job.

To ensure this, it is wise to include contribution to continual improvement in all job descriptions and every employee's objectives, as well as in contracts with external suppliers and contractors.

The highest levels of the organization need to take responsibility for embedding continual improvement into the way that people think and work.

When contracting for a supplier's service, the contract should include details of how they will measure, report on, and improve their services over the life of the contract. If data will be required from suppliers to operate internal improvements, that should be specified in the contract as well.



To track and manage improvement ideas from identification through to final action, organizations use a database or structured document called a continual improvement register (CIR).

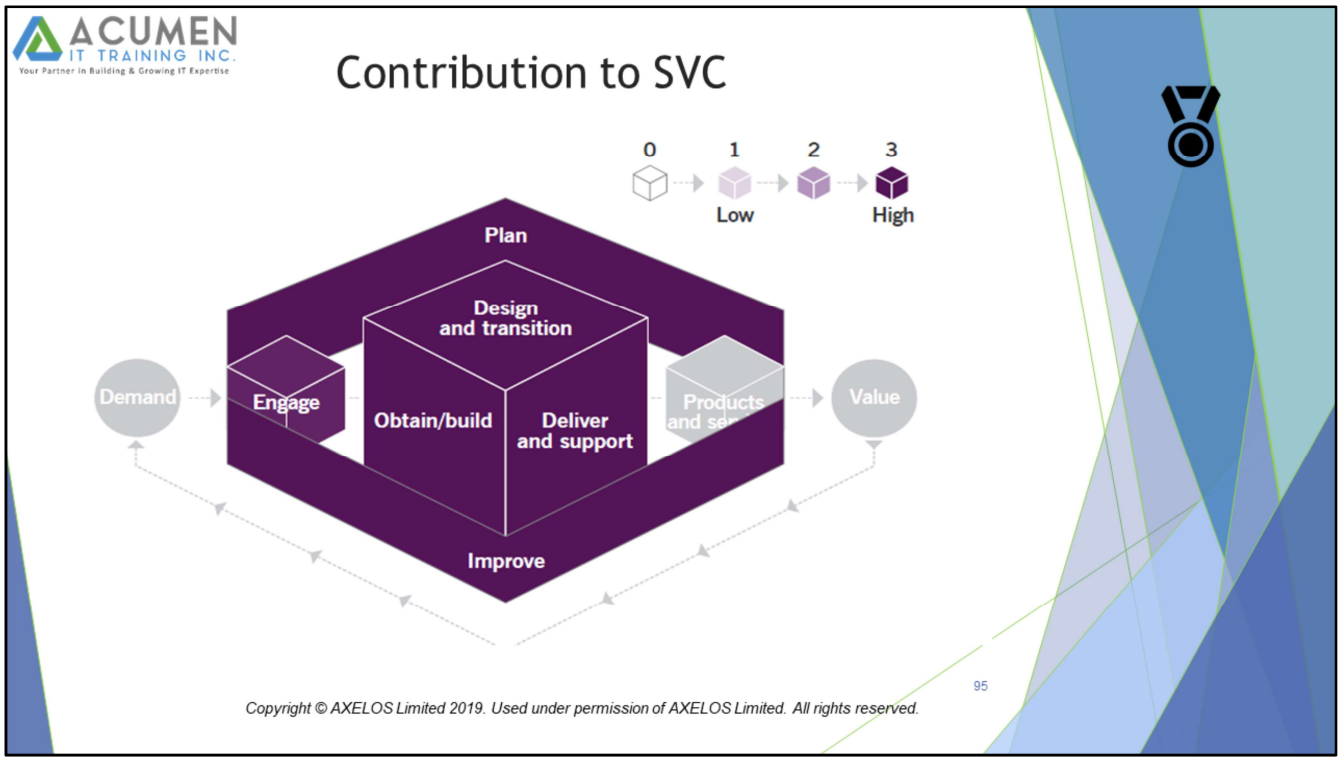
There can be more than one CIR in an organization, as multiple CIRs can be maintained on individual, team, departmental, business unit, and organizational levels. Some organizations maintain a single master CIR, but segment how it is used and by whom at a more granular level.
Ideas are captured, documented, assessed, prioritized and appropriately acted on.

A CIR provides a consolidated, consistent view of all improvement opportunities, their potential benefits, status, outcomes achieved etc..

Improvement ideas can also initially be captured in other places and through other practices, such as during project execution or software development activities. In this case, it is important to document for attention the improvement ideas that come up as part of ongoing continual improvement.

As new ideas are documented, CIRs are used to constantly reprioritize improvement opportunities. The use of CIRs provides additional value because they help to make things visible. This is not limited to what is currently being done, but also to what is already complete and what has been set aside for further consideration at a later date.

It does not matter exactly how the information in a CIR is structured, or what the collections of improvement ideas are called in any given organization. What is important is that improvement ideas are **captured, documented, assessed, prioritized,** and appropriately acted upon to ensure that the organization and its services are always being improved.



Above diagram depicts a heat map of the contribution of continual improvement to value chain activities.

You can understand the contribution of continual improvement to the service value chain, with the practice being involved in all value chain activities:

- **Plan:**

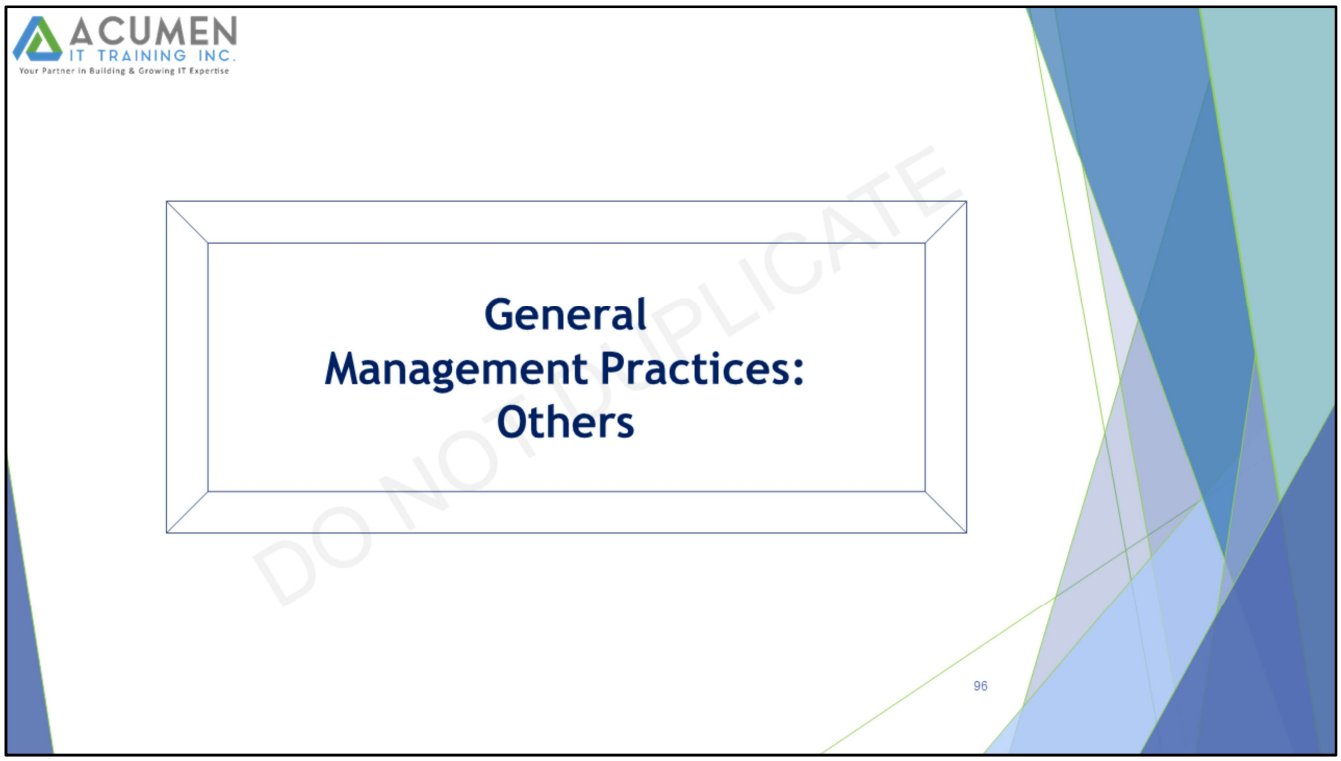
The continual improvement practice is applied to planning activities, methods, and techniques to make sure they are relevant to the organization's current objectives and context.

- **Improve:**

The continual improvement practice is key to this value chain activity. It structures resources and activities, enabling improvement at all levels of the organization and the SVS.

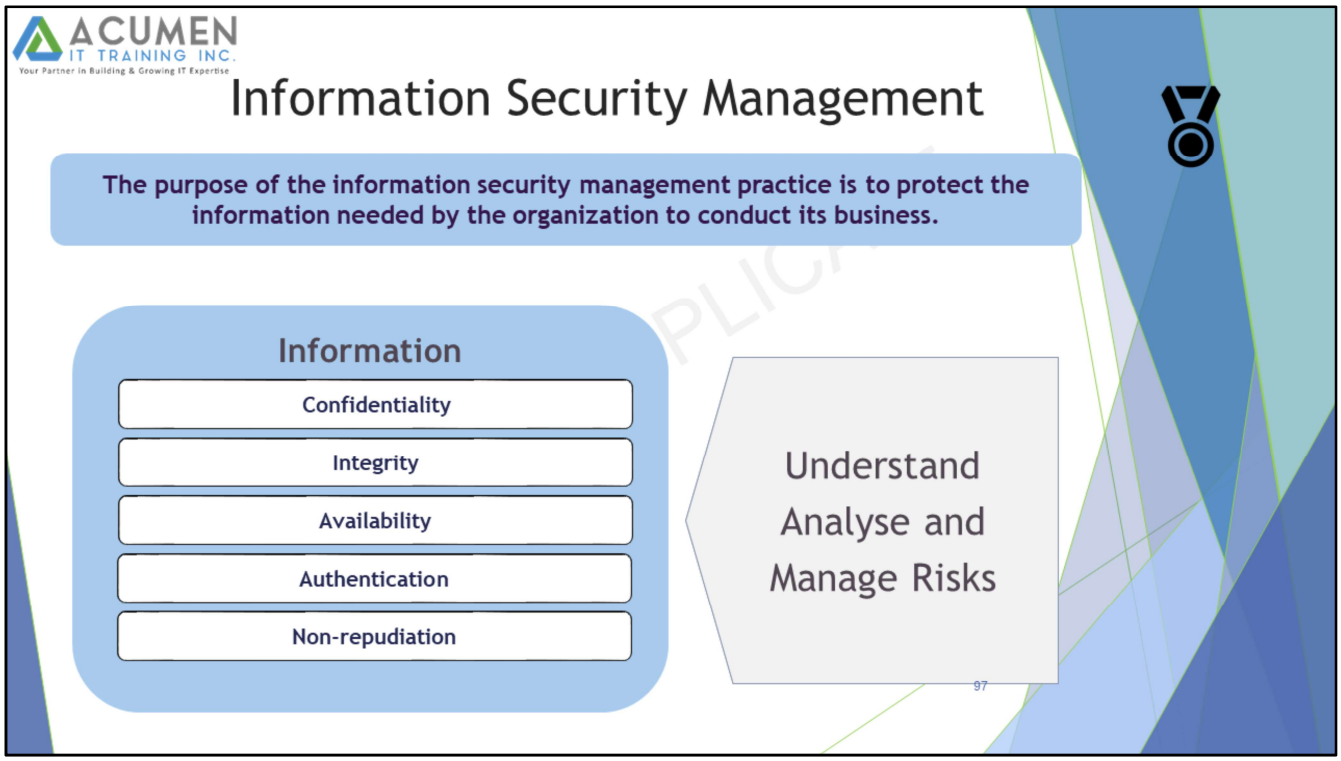
- **Engage, design and transition, obtain/build, and deliver and support:**

Each of these value chain activities is subject to continual improvement, and the continual improvement practice is applied to all of them.



In this section we will discuss 3 practices :

- Information security management
- Relationship management and
- Supplier management



The required security is established by means of policies, processes, behaviors, risk management, and controls, which must maintain a balance between:se

- **Prevention: Ensuring that security incidents don't occur**
- **Detection: Rapidly and reliably detecting incidents that can't be prevented**
- **Correction: Recovering from incidents after they are detected.**

It is also important to achieve a balance between protecting the organization from harm and allowing it to innovate. Information security controls that are too restrictive may do more harm than good, or may be circumvented by people trying to do work more easily. Information security controls should consider all aspects of the organization and align with its risk appetite.

Information security management interacts with every other practice. It creates controls that each practice must consider when planning how work will be done. It also depends on other practices to help protect information.

The definition of the key terms here as per ITIL 4 are:

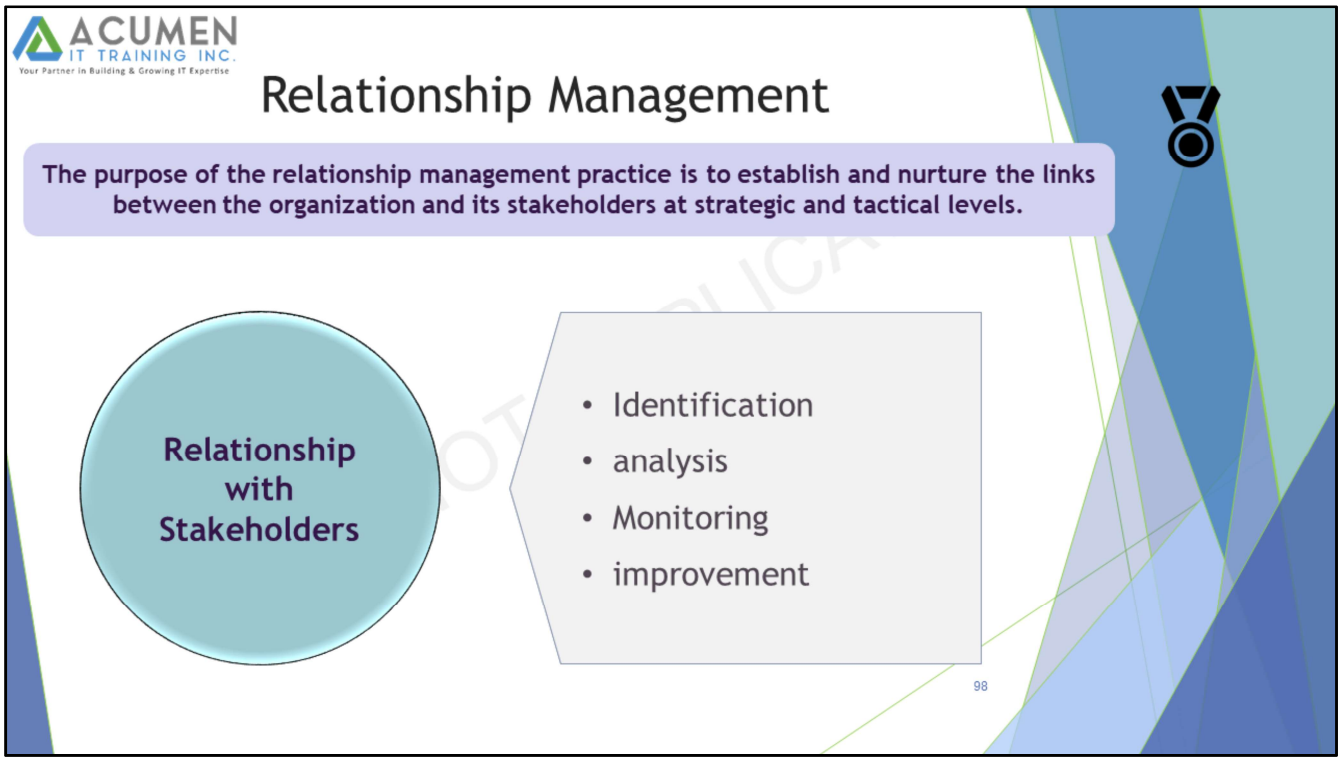
Confidentiality : A security objective that ensures information is not made available or disclosed to unauthorized entities.

Integrity : A security objective that ensures information is only modified by authorized personnel and activities.

Availability: A security objective that ensures information is available to authorized entities when needed

Authentication: A Security objective of ensuring someone is who they claim to be.

Non-Repudiation: A security Objective ensuring that someone can't deny that they took an action.



Relationship management includes the identification, analysis, monitoring, and continual improvement of relationships with and between stakeholders.

Service providers quite naturally focus most of their efforts on their relationships with service consumers (sponsors, customers, and users). It is a very important stakeholder group; however, organizations should ensure that they understand and manage their relationships with various stakeholders, both internal and external.

The relationship management practice ensures that:

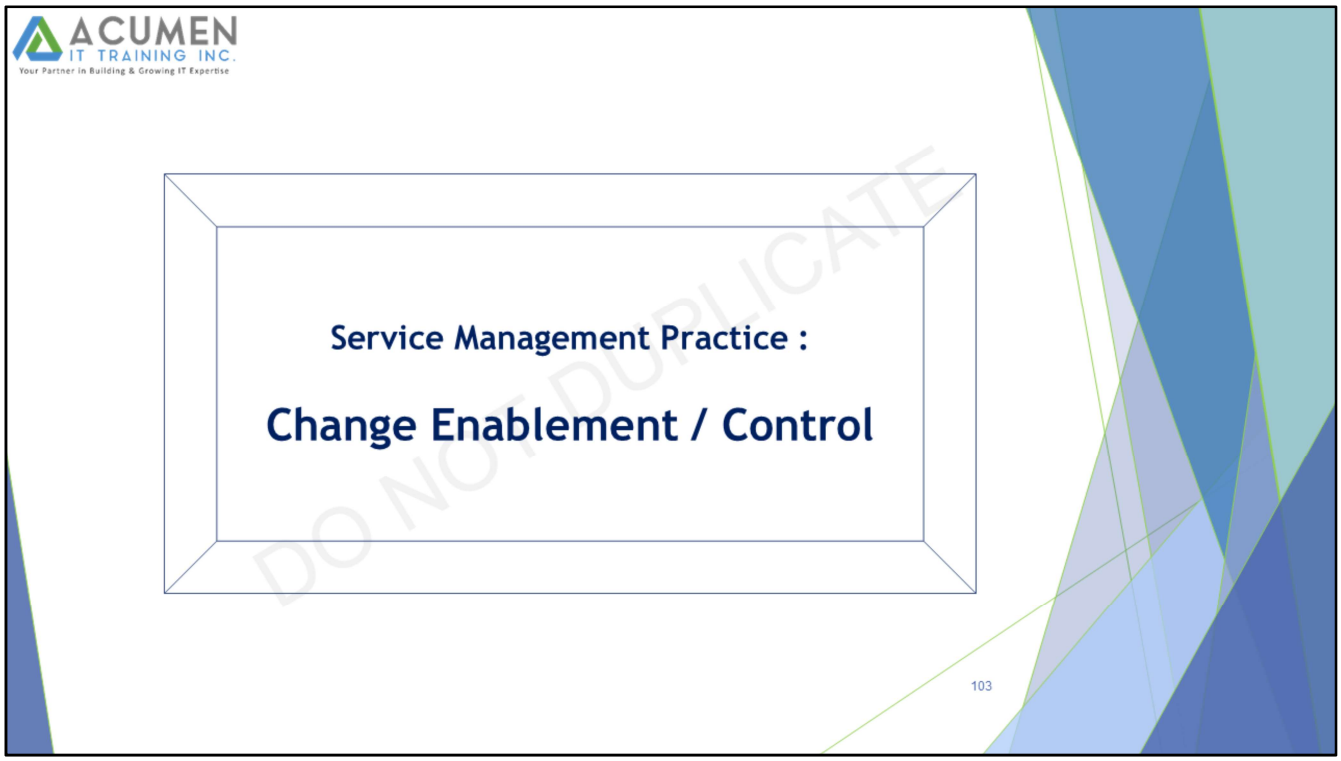
- stakeholders' needs and drivers are understood, and products and services are prioritized appropriately
- stakeholders' satisfaction is high and a constructive relationship between the organization and stakeholders is established and maintained
- customers' priorities for new or changed products and services, in alignment with desired business outcomes, are effectively established and articulated
- any stakeholders' complaints and escalations are handled well through a sympathetic (yet formal) process
- products and services facilitate value creation for the service consumers as well as for the organization
- the organization facilitates value creation for all stakeholders, in line with its strategy and priorities
- conflicting stakeholder requirements are mediated appropriately.

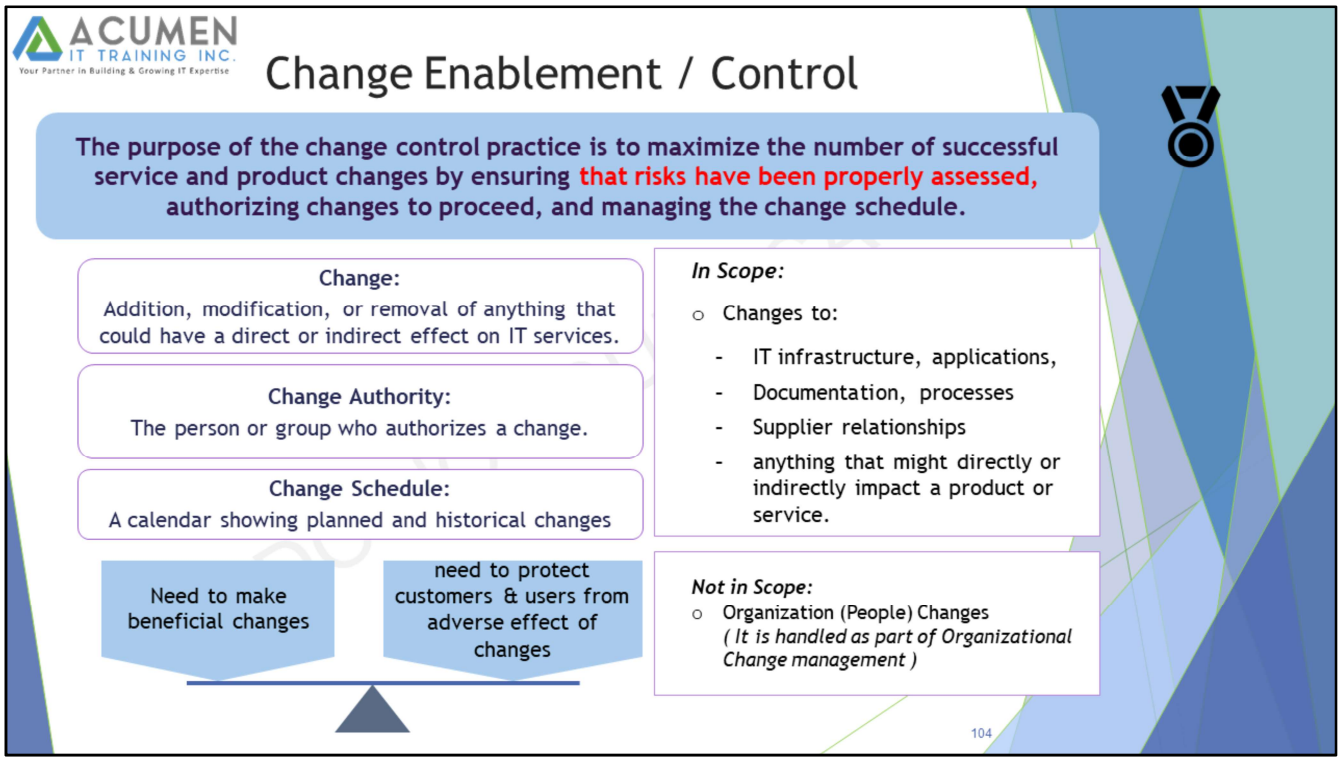
Activities that are central to the practice include:

- Creating a single point of visibility and control to ensure consistency This should be across all products, services, service components, and procedures provided or operated by internal and external suppliers, including customers acting as suppliers.
- Maintaining a supplier strategy, policy, and contract management information
- Negotiating and agreeing contracts and arrangements Agreements need to be aligned with business needs and service targets. Contracts with external suppliers might need to be negotiated or agreed through the legal, procurement, commercial, or contracts functions of the organization. For an internal supplier there will need to be an internal agreement.
- Managing relationships and contracts with internal and external suppliers This should be done when planning, designing, building, orchestrating, transitioning, and operating products and services, working closely with procurement and performance management.
- Managing supplier performance Supplier performance should be monitored to ensure that they meet the terms, conditions, and targets of their contracts and agreements, while aiming to increase the value for money obtained from suppliers and the products/services they provide.

From the 17 Service management practices, at foundation level, we will be examining:

- **Purpose of the Seven practices marked in BOLD as well as**
- **Six Practices** (marked in BOLD and underlined) in detail.





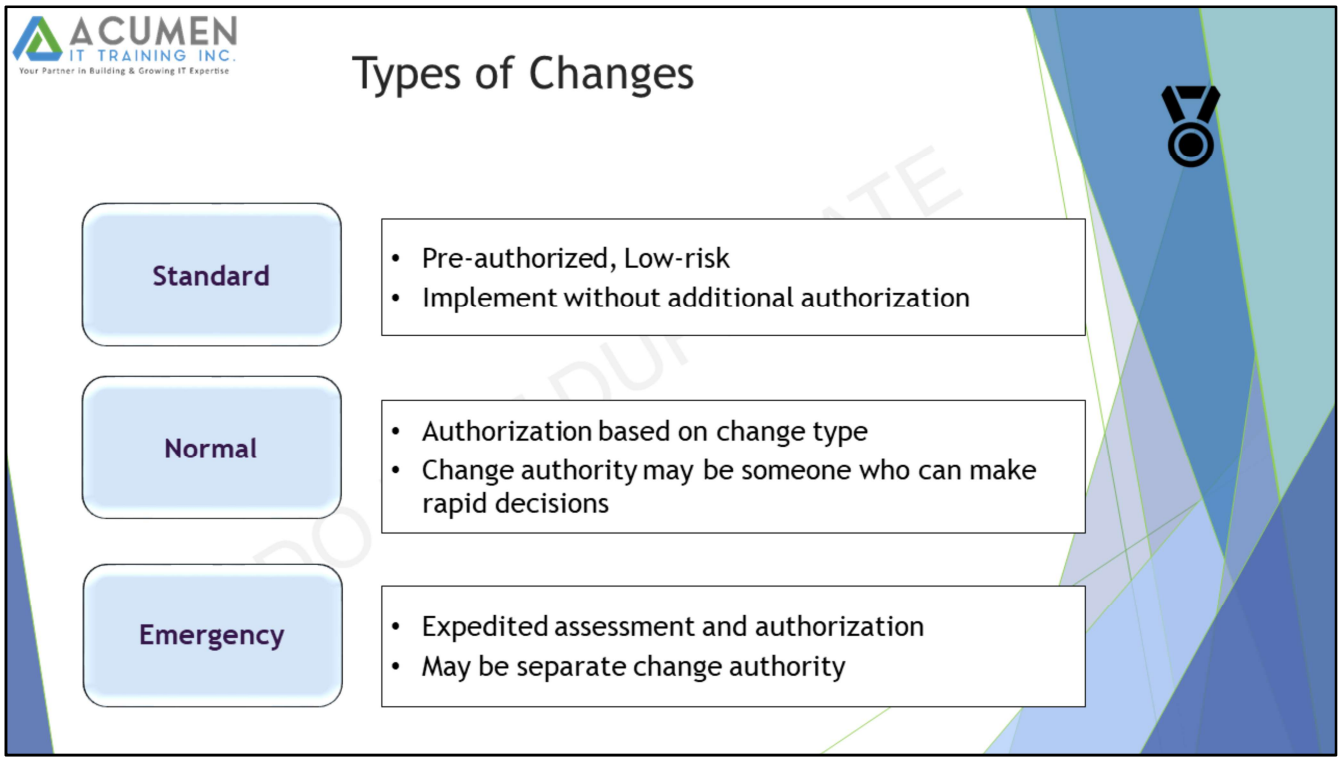
Change enablement practice must balance the need to make beneficial changes that will deliver additional value with the need to protect customers and users from the adverse effect of changes. All changes should be assessed by people who are able to understand the risks and the expected benefits; the changes must then be authorized before they are deployed. This assessment, however, should not introduce unnecessary delay.

The person or group who authorizes a change is known as a change authority. It is essential that the correct change authority is assigned to each type of change to ensure that change is both efficient and effective. In high-velocity organizations, it is a common practice to decentralize change approval, making the peer review a top predictor of high performance.

The change schedule is used to help plan changes, assist in communication, avoid conflicts, and assign resources. It can also be used after changes have been deployed to provide information needed for incident management, problem management, and improvement planning. Regardless of who the change authority is, they may need to communicate widely across the organization.

The scope of change enablement is defined by each organization. It will typically include all IT infrastructure, applications, documentation, processes, supplier relationships, and anything else that might directly or indirectly impact a product or service.

It is important to distinguish change enablement from organizational change management. Organizational change management manages the people aspects of changes to ensure that improvements and organizational transformation initiatives are implemented successfully. Change enablement is usually focused on changes in products and services.



There are three types of change that are each managed in different ways:

Standard changes:

These are low-risk, pre-authorized changes that are well understood and fully documented, and can be implemented without needing additional authorization. They are often initiated as service requests, but may also be operational changes.

When the procedure for a standard change is created or modified, there should be a full risk assessment and authorization as for any other change. This risk assessment does not need to be repeated each time the standard change is implemented; it only needs to be done if there is a modification to the way it is carried out.

Normal changes:

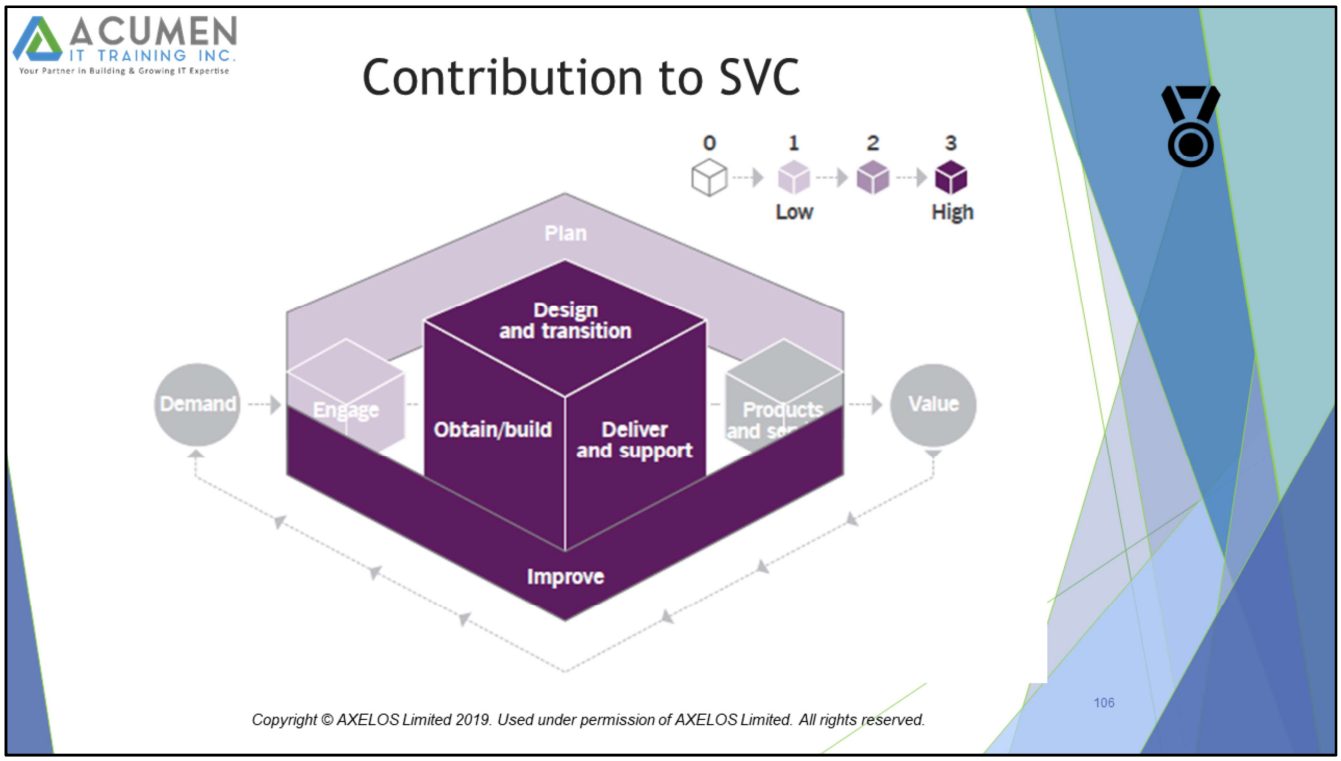
These are changes that need to be scheduled, assessed, and authorized following a process. Change models based on the type of change determine the roles for assessment and authorization.

Some normal changes are low risk, and the change authority for these is usually someone who can make rapid decisions, often using automation to speed up the change. Other normal changes are very major and the change authority could be as high as the management board (or equivalent).

Initiation of a normal change is triggered by the creation of a change request. This may be created manually, but organizations that have an automated pipeline for continuous integration and continuous deployment often automate most steps of the change control process.

Emergency changes:

These are changes that must be implemented as soon as possible; for example, to resolve an incident or implement a security patch. Emergency changes are not typically included in a change schedule, and the process for assessment and authorization is expedited to ensure they can be implemented quickly. There may also be a separate change authority for emergency changes, typically including a small number of senior managers who understand the business risks involved.



Above diagram depicts a heat map of the contribution of Change enablement to value chain activities.

You can understand the contribution of Change enablement to the service value chain, with the practice being involved in all value chain activities:

- Plan:

Changes to product and service portfolios, policies, and practices all require a certain level of control, and the change enablement practice is used to provide it.

- Improve:

Many improvements will require changes to be made, and these should be assessed and authorized in the same way as all other changes.

- Engage:

Customers and users may need to be consulted or informed about changes, depending on the nature of the change.

- Design and transition:

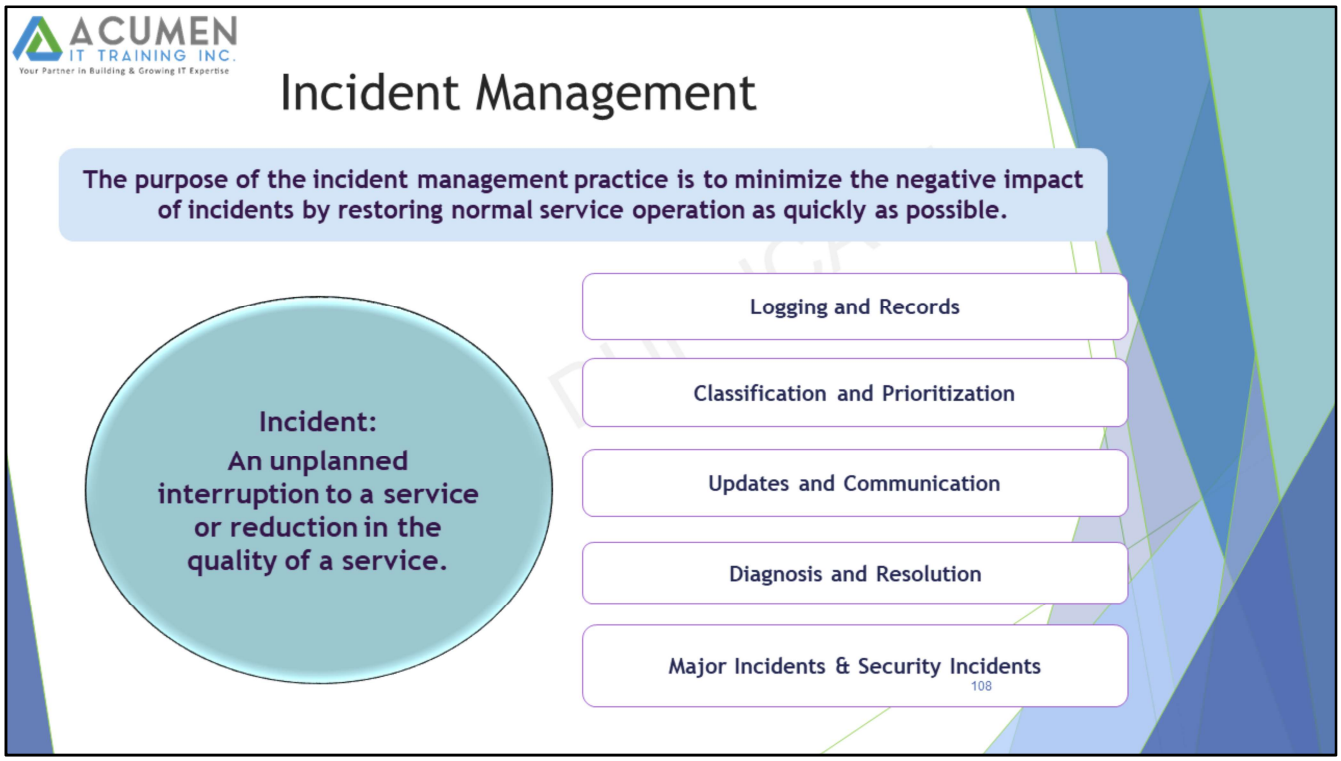
Many changes are initiated as a result of new or changed services. Change enablement activity is a major contributor to transition.

- Obtain/build:

Changes to components are subject to change enablement , whether they are built in house or obtained from suppliers.

- Deliver and support:

Changes may have an impact on delivery and support, and information about changes must be communicated to personnel who carry out this value chain activity. These people may also play a part in assessing and authorizing changes.



Incident management can have an enormous impact on customer and user satisfaction, and on how customers and users perceive the service provider. Every incident should be logged and managed to ensure that it is resolved in a time that meets the expectations of the customer and user.

Target resolution times are agreed, documented, and communicated to ensure that expectations are realistic. Incidents are prioritized based on an agreed classification to ensure that incidents with the highest business impact are resolved first.

Organizations should design their incident management practice to provide appropriate management and resource allocation to different types of incident. Incidents with a low impact must be managed efficiently to ensure that they do not consume too many resources. Incidents with a larger impact may require more resources and more complex management. **There are usually separate processes for managing major incidents,** and for managing information **security incidents.**

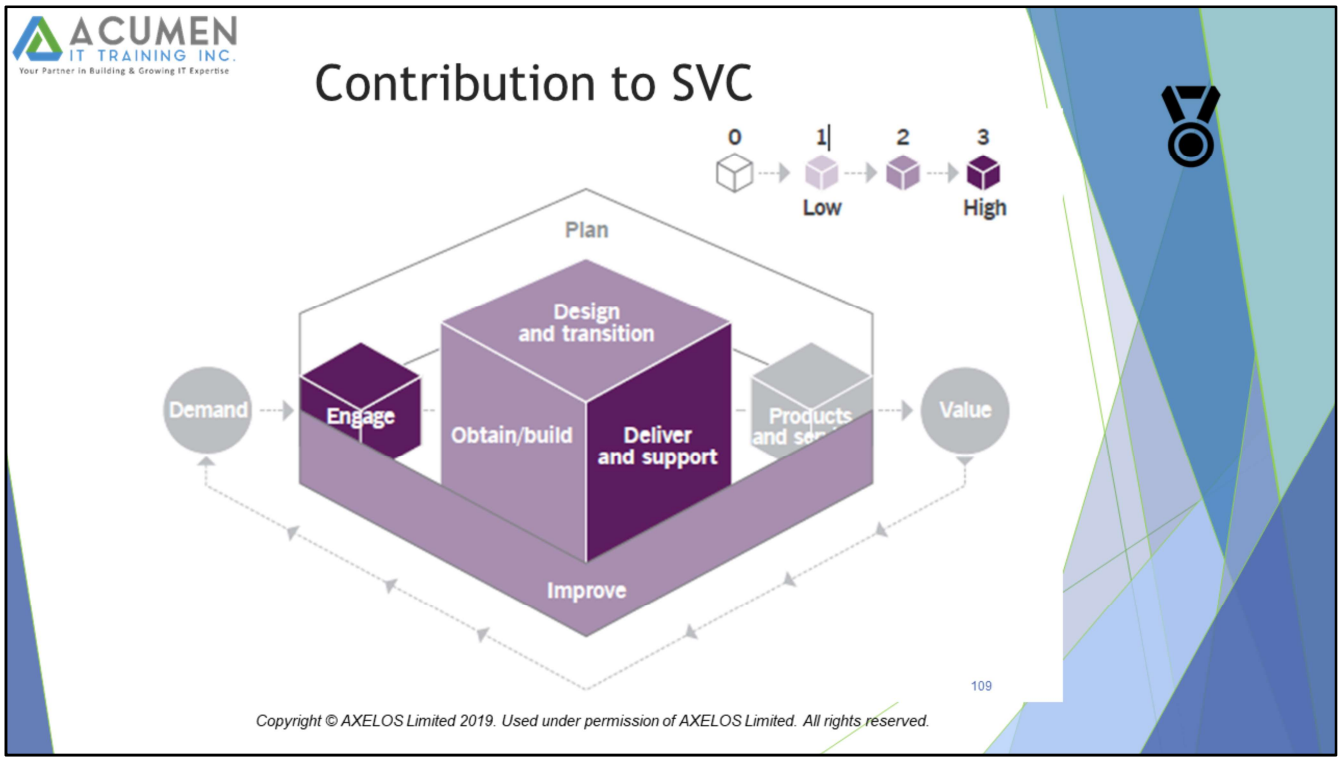
Information about incidents should be stored in incident records in a suitable tool. Ideally, this tool should also provide links to related CIs, changes, problems, known errors, and other knowledge to enable quick and efficient diagnosis and recovery. Modern IT service management tools can provide automated matching of incidents to other incidents, problems, or known errors, and can even provide intelligent analysis of incident data to generate recommendations for helping with future incidents.

It is important that people working on an incident provide good-quality updates in a timely fashion. These updates should include information about symptoms, business impact, CIs affected, actions completed, and actions planned. Each of these should have a timestamp and information about the people involved, so that the people involved or interested can be kept informed. There may also be a need for good collaboration tools so that people working on an incident can collaborate effectively.

Incidents may be diagnosed and resolved by people in many different groups, depending on the complexity of the issue or the incident type. All of these groups need to understand the incident management process, and how their contribution to this helps to manage the value, outcomes, costs, and risks of the services provided. (VOCR) **SWARMING**

Effective incident management often requires a high level of collaboration within and between teams. These teams may include the service desk, technical support, application support, and vendors.

There should be a formal process for logging and managing incidents.



Above diagram depicts a heat map of the contribution of Incident Management to value chain activities.

You can understand the contribution of Incident Management to the service value chain, with the practice being involved in all value chain activities:

- Improve:

Incident records are a key input to improvement activities, and are prioritized both in terms of incident frequency and severity.

- Engage:

Incidents are visible to users, and significant incidents are also visible to customers. Good incident management requires regular communication to understand the issues, set expectations, provide status updates, and agree that the issue has been resolved so the incident can be closed.

- Design and transition:

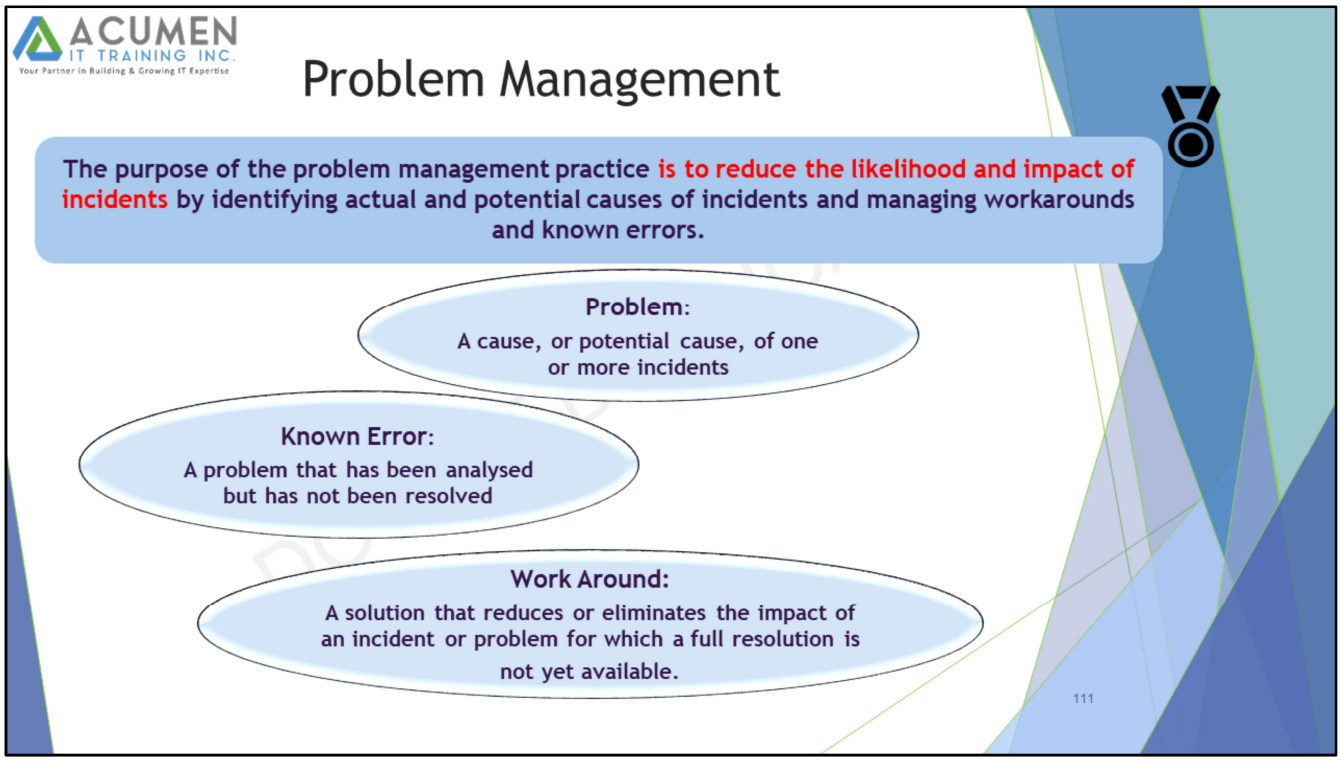
Incidents may occur in test environments, as well as during service release and deployment. The practice ensures these incidents are resolved in a timely and controlled manner.

- Obtain/build:

Incidents may occur in development environments. Incident management practice ensures these incidents are resolved in a timely and controlled manner.

- Deliver and support:

Incident management makes a significant contribution to support. This value chain activity includes resolving incidents and problems.



Every service has errors, flaws, or vulnerabilities that may cause incidents. They may include errors in any of the four dimensions of service management. Many errors are identified and resolved before a service goes live.

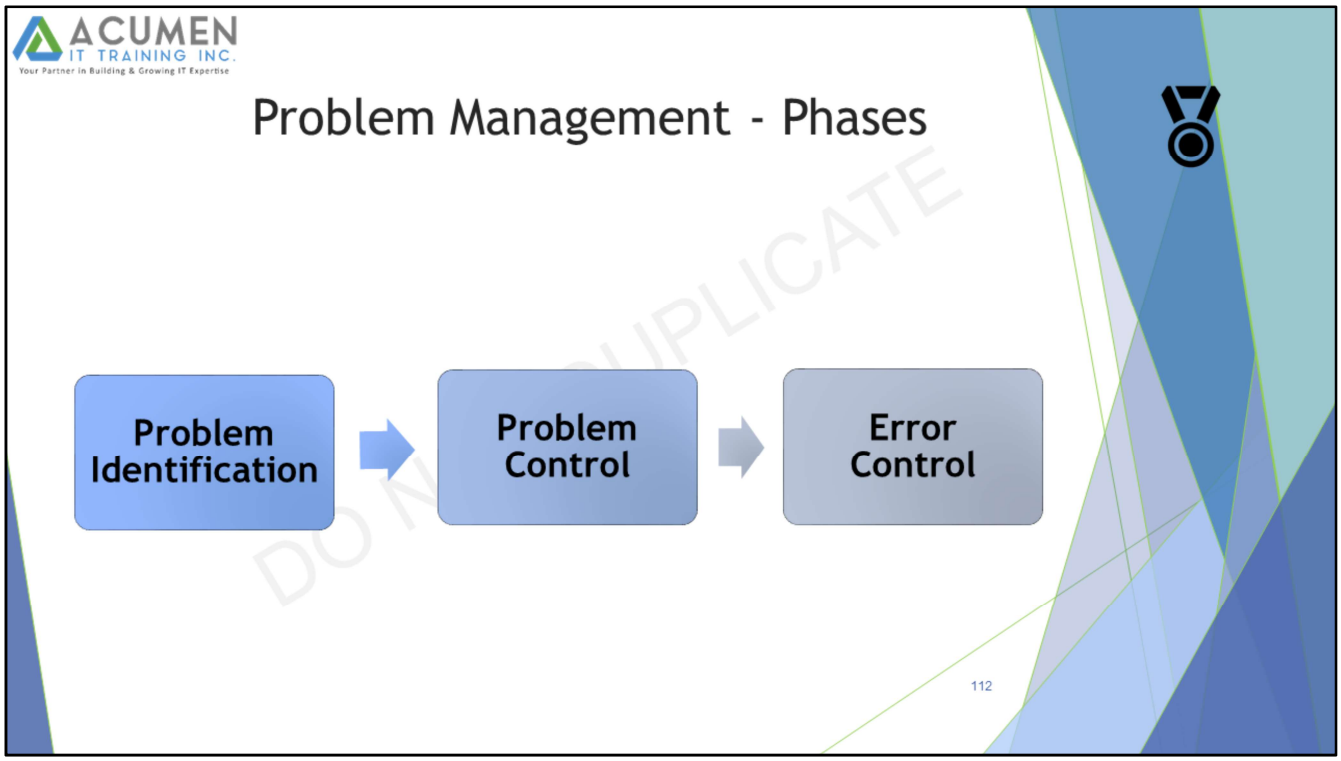
However, some remain unidentified or unresolved, and may be a risk to live services. In ITIL, these errors are called problems and they are addressed by the problem management practice.

Problems are related to incidents, but should be distinguished as they are managed in different ways:

- **Incidents have an impact on users or business processes, and must be resolved so that normal business activity can take place.**
- **Problems are the causes of incidents. They require investigation and analysis to identify the causes, develop workarounds, and recommend longer-term resolution. This reduces the number and impact of future incidents.**

When a problem cannot be resolved quickly, it is often useful to find and document a workaround for future incidents, based on an understanding of the problem. Workarounds are documented in problem records. This can be done at any stage; it doesn't need to wait for analysis to be complete. If a workaround has been documented early in problem control, then this should be reviewed and improved after problem analysis has been completed.

An effective incident workaround can become a permanent way of dealing with some problems when resolving the problem is not viable or cost-effective. In this case, the problem remains in the known error status, and the documented workaround is applied should related incidents occur. Every documented workaround should include a clear definition of the symptoms to which it applies. In some cases, workaround application can be automated.



Problem management involves three distinct phases, as shown in Figure.

Problem identification activities identify and log problems. These include:

- **performing trend analysis of incident records**
- **detection of duplicate and recurring issues by users, service desk, and technical support staff**
- **during major incident management, identifying a risk that an incident could recur**
- **analysing information received from suppliers and partners**
- **analysing information received from internal software developers, test teams, and project teams.**

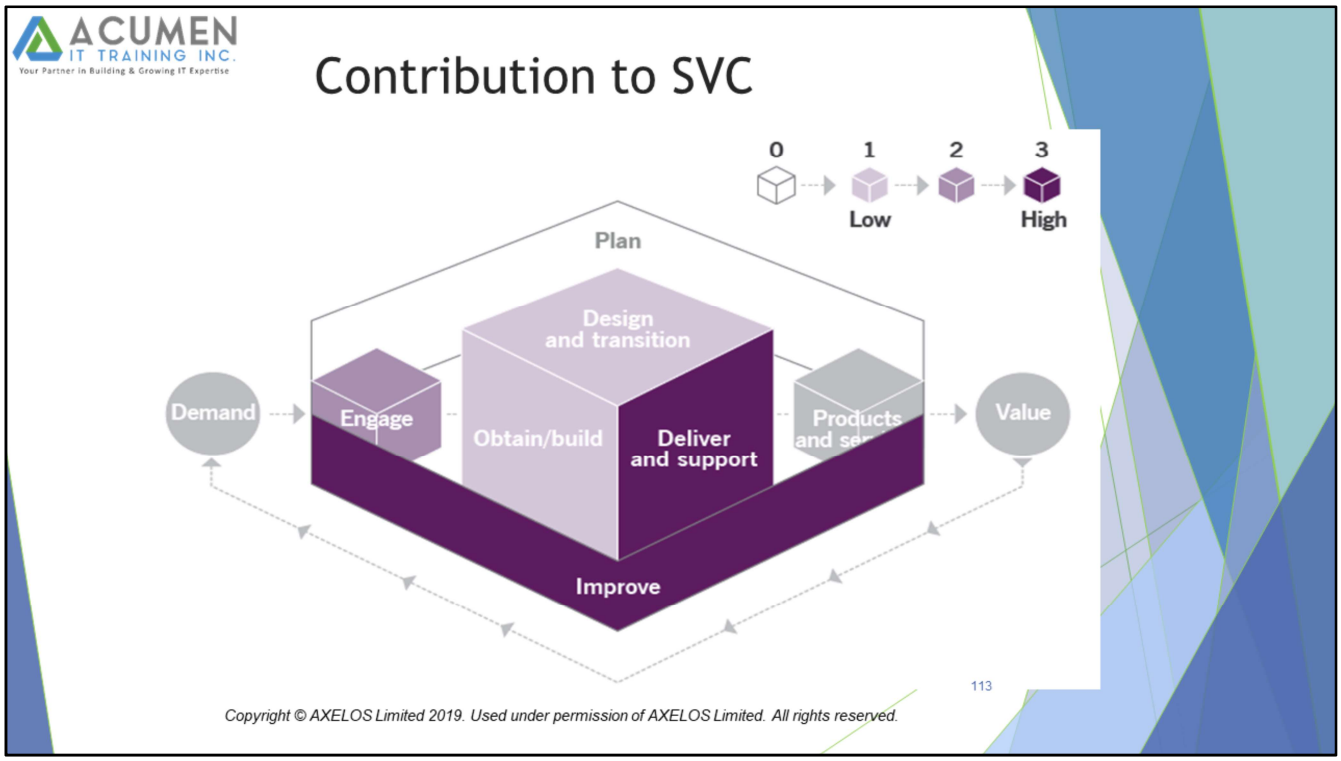
Other sources of information can also lead to problems being identified.

Problem control activities include problem analysis, and documenting workarounds and known errors. Problems are prioritized for analysis based on the risk that they pose, and are managed as risks based on their potential impact and probability. It is not essential to analyse every problem; it is more valuable to make significant progress on the highest-priority problems than to investigate every minor problem that the organization is aware of.

An effective incident workaround can become a permanent way of dealing with some problems when resolving the problem is not viable or cost-effective. In this case, the problem remains in the known error status, and the documented workaround is applied should related incidents occur. Every documented workaround should include a clear definition of the symptoms to which it applies. In some cases, workaround application can be automated.

For other problems, a way to fix the error should be found. This is a part of error control. **Error control activities** manage known errors, which are problems where initial analysis has been completed; it usually means that faulty components have been identified. Error control also includes identification of potential permanent solutions which may result in a change request for implementation of a solution, but only if this can be justified in terms of cost, risks, and benefits.

Error control regularly re-assesses the status of known errors that have not been resolved, including overall impact on customers, availability and cost of permanent resolutions, and effectiveness of workarounds. The effectiveness of workarounds should be evaluated each time a workaround is used, as the workaround may be improved based on the assessment.



Above diagram depicts a heat map of the contribution of Problem Management to value chain activities.

You can understand the contribution of Problem Management to the service value chain, with the practice being involved in all value chain activities:

- Improve:

This is the main focus area for problem management. Effective problem management provides the understanding needed to reduce the number of incidents and the impact of incidents that can't be prevented.

- Engage:

Problems that have a significant impact on services will be visible to customers and users. In some cases, customers may wish to be involved in problem prioritization, and the status and plans for managing problems should be communicated. Workarounds are often presented to users via a service portal.

- Design and transition:

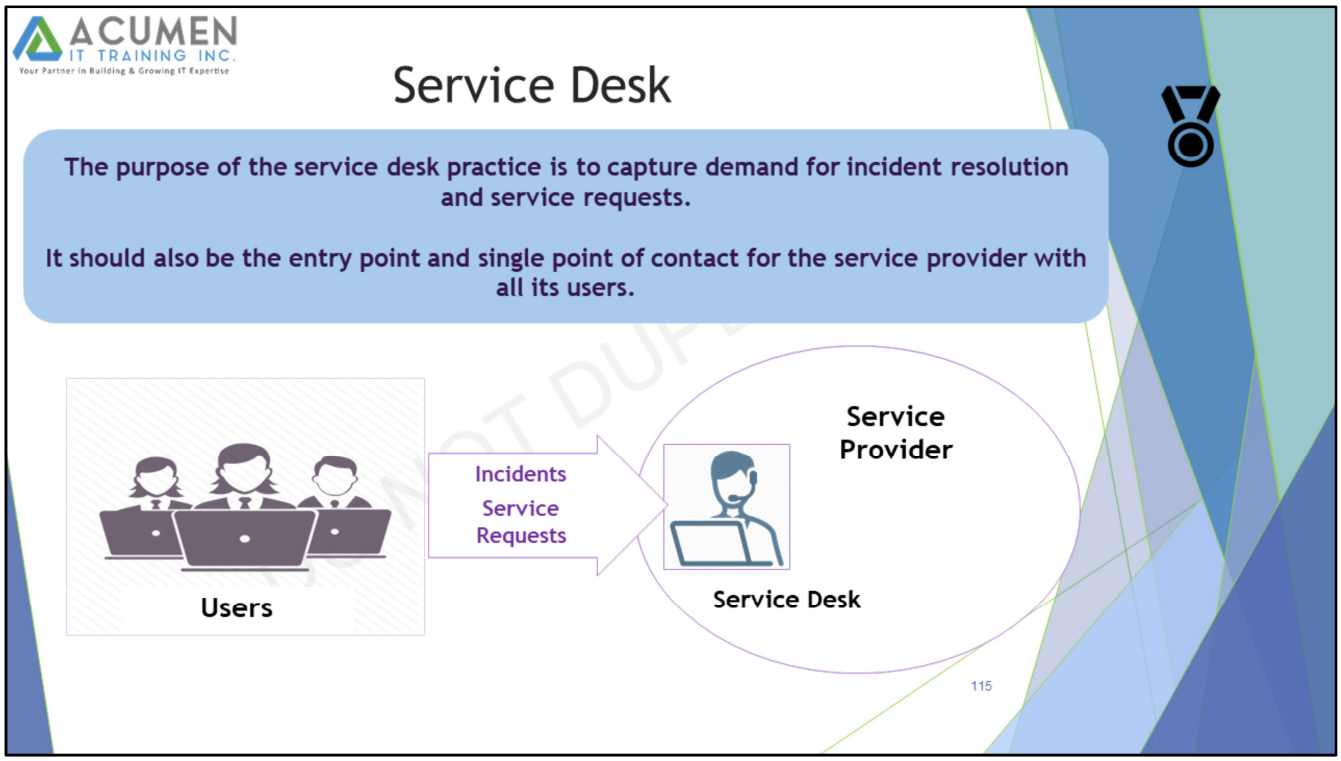
Problem management provides information that helps to improve testing and knowledge transfer.

- Obtain/build:

Product defects may be identified by problem management; these are then managed as part of this value chain activity.

- Deliver and support:

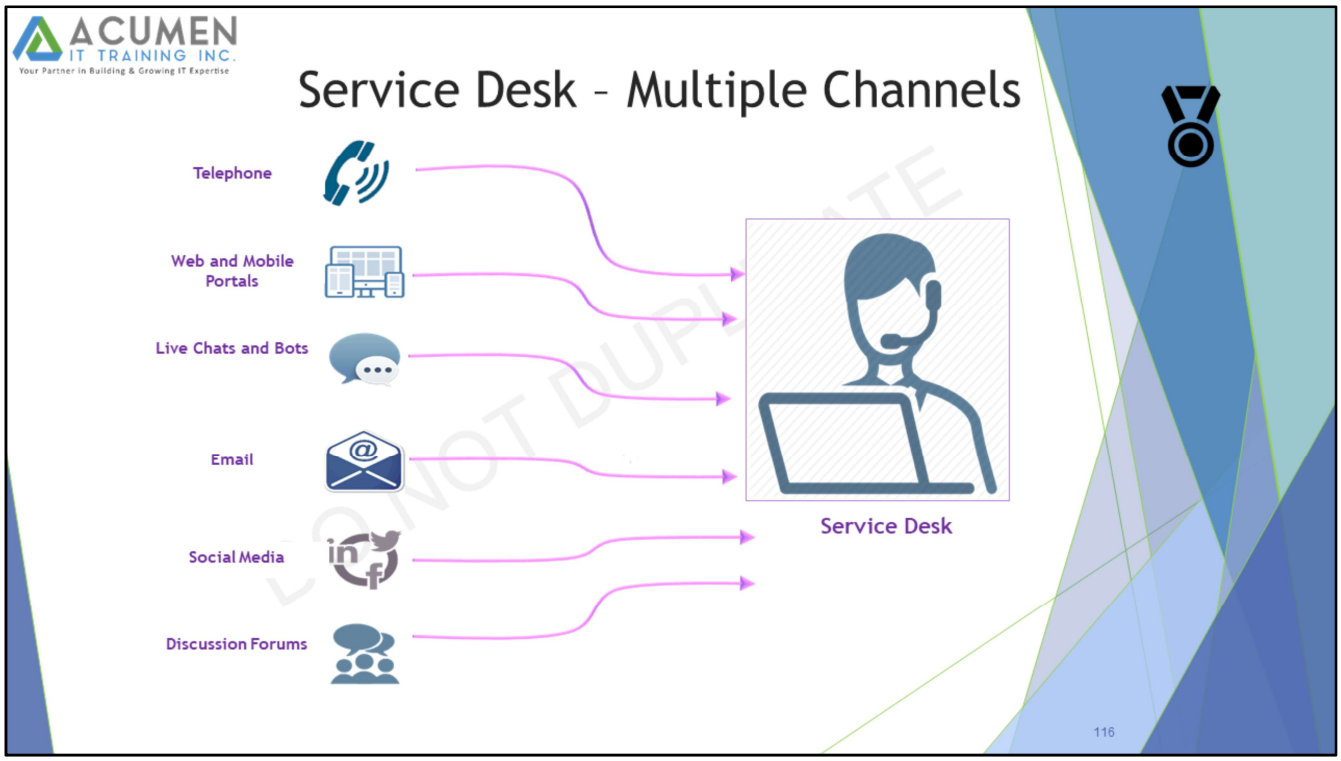
Problem management makes a significant contribution by preventing incident repetition and supporting timely incident resolution.



Service desks provide a clear path for users to report issues, queries, and requests, and have them acknowledged, classified, owned, and actioned. How this practice is managed and delivered may vary from a physical team of people on shift work to a distributed mix of people connected virtually, or automated technology and bots. **The function and value remain the same, regardless of the model.**

With increased automation and the gradual removal of technical debt, the focus of the service desk is to provide support for 'people and business' rather than simply technical issues. Service desks are increasingly being used to get various matters arranged, explained, and coordinated, rather than just to get broken technology fixed, and the service desk has become a vital part of any service operation.

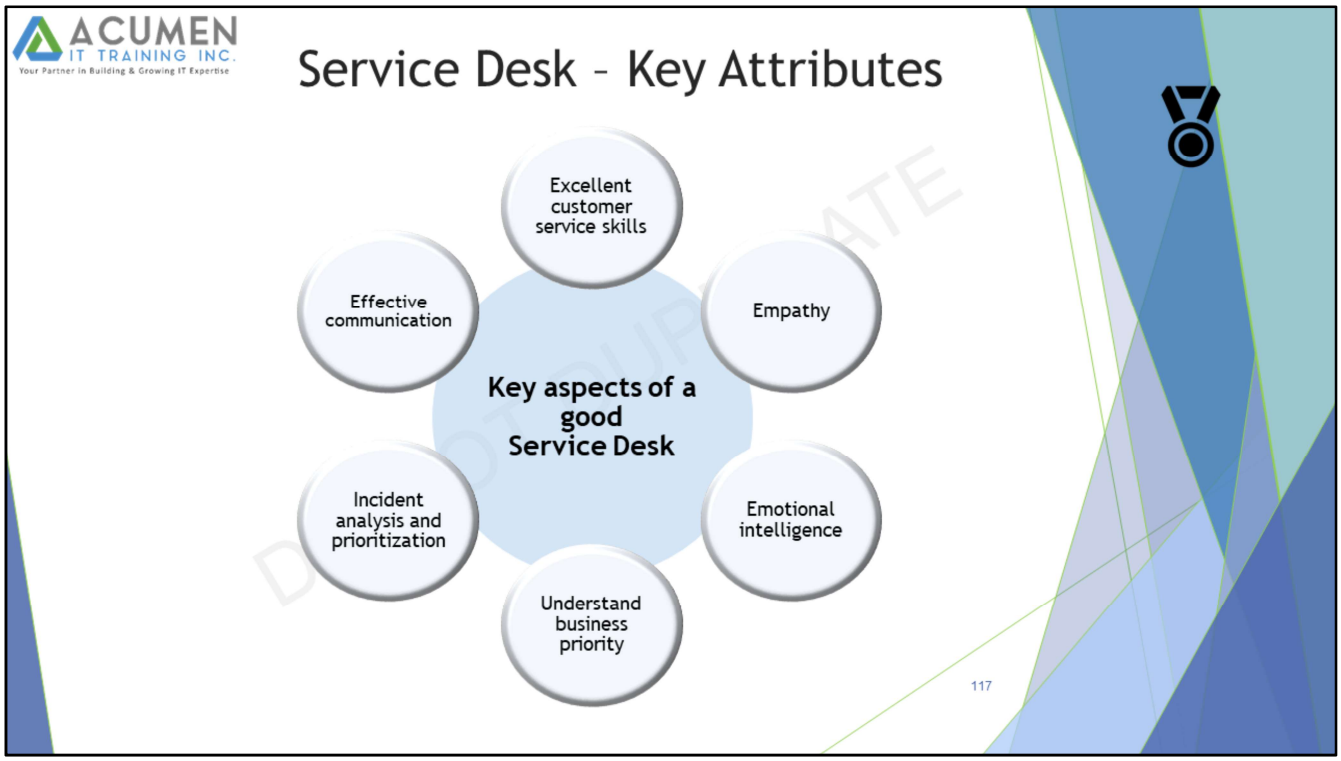
With increased automation, AI, robotic process automation (RPA), and chatbots, service desks are moving to provide more self-service logging and resolution directly via online portals and mobile applications. The impact on service desks is reduced phone contact, less low-level work, and a greater ability to focus on excellent CX when personal contact is needed.



Service desks provide a variety of channels for access.

These include:

- phone calls, which can include specialized technology, such as interactive voice response (IVR), conference calls, voice recognition, and others
- service portals and mobile applications, supported by service and request catalogues, and knowledge bases
- chat, through live chat and Chatbots
- email for logging and updating, and for follow-up surveys and confirmations. Unstructured emails can be difficult to process, but emerging technologies based on AI and machine learning are starting to address this
- walk-in service desks are becoming more prevalent in some sectors, e.g. higher education, where there are high peaks of activity that demand physical presence
- text and social media messaging, which are useful for notifications in case of major incidents and for contacting specific stakeholder groups, but can also be used to allow users to request support
- public and corporate social media and discussion forums for contacting the service provider and for peer-to-peer support.



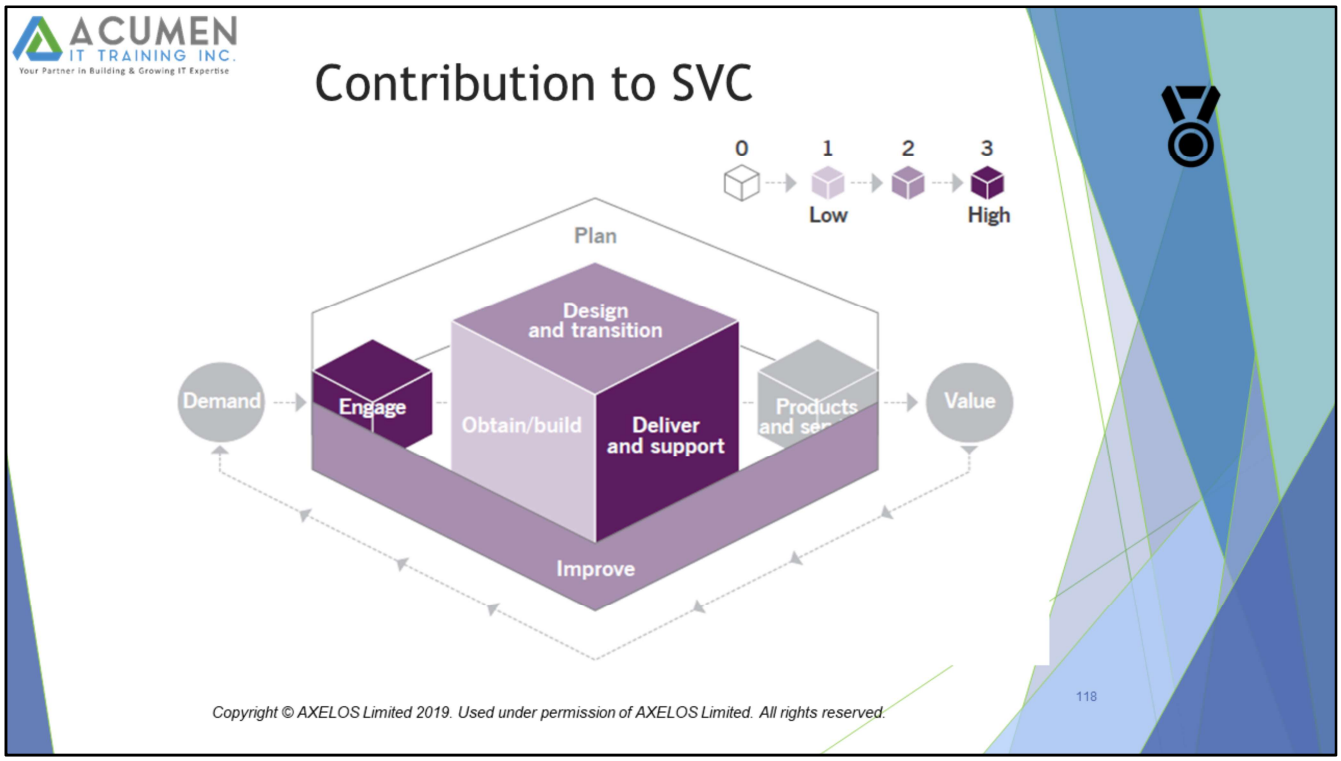
The service desk may not need to be highly technical, although some are.

However, even if the service desk is fairly simple, it still plays a vital role in the delivery of services, and must be actively supported by its peer groups.

It is also essential to understand that **the service desk has a major influence on user experience and how the service provider is perceived by the users.**

The service desk may not need to be highly technical, although some are. However, even if the service desk is fairly simple, it still plays a vital role in the delivery of services, and must be actively supported by its peer groups. It is also essential to understand that the service desk has a major influence on user experience and how the service provider is perceived by the users.

Another key aspect of a good service desk is its practical understanding of the wider business context, the business processes, and the users. Service desks add value not simply through the transactional acts of, for example, incident logging, but also by understanding and acting on the business context of this action. The service desk should be the empathetic and informed link between the service provider and its users.



Above diagram depicts a heat map of the contribution of Service Desk to value chain activities.

You can understand the contribution of Service Desk to the service value chain, with the practice being involved in all value chain activities:

- Improve:

Service desk activities are constantly monitored and evaluated to support continual improvement, alignment, and value creation. Feedback from users is collected by the service desk to support continual improvement.

- Engage:

The service desk is the main channel for tactical and operational engagement with users.

- Design and transition:

The service desk provides a channel for communicating with users about new and changed services. Service desk staff participate in release planning, testing, and early life support.

- Obtain/build:

Service desk staff can be involved in acquiring service components used to fulfil service requests and resolve incidents.

- Deliver and support:

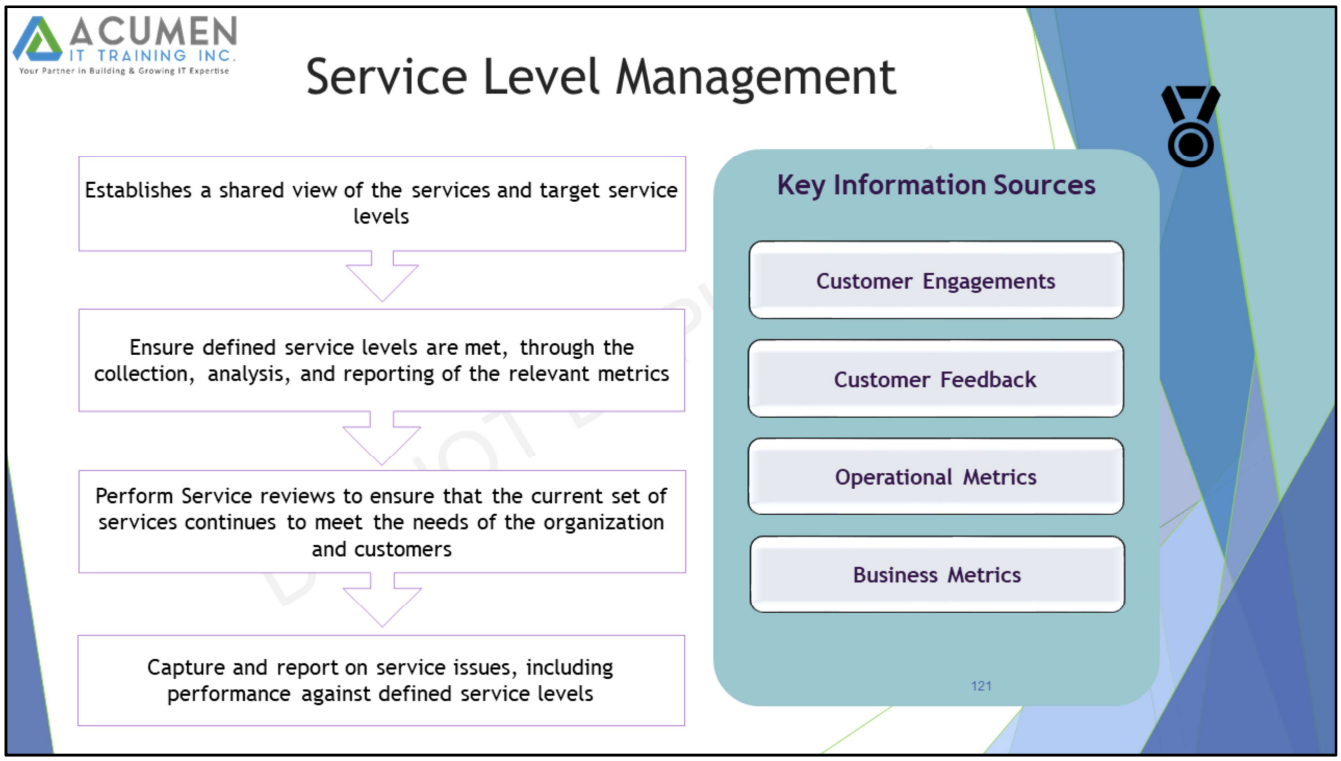
The service desk is the coordination point for managing incidents and service requests.

Service level management identifies metrics and measures that are a truthful reflection of the customer's actual experience and level of satisfaction with the whole service. These will vary across organizations and the only way to learn what these are is to find out directly from customers.

The skills and competencies for service level management include relationship management, business liaison, business analysis, and commercial/supplier management. The practice requires pragmatic focus on the whole service and not simply its constituent parts; for example, simple individual metrics (such as percentage system availability) should not be taken to represent the whole service.

Service level agreements (SLAs) have long been used as a tool to measure the performance of services from the customer's point of view, and it is important that they are agreed in the wider business context.

Using SLAs may present many challenges; often they do not fully reflect the wider service performance and the user experience.



Service level management provides the end-to-end visibility of the organization's services. To achieve this, service level management:

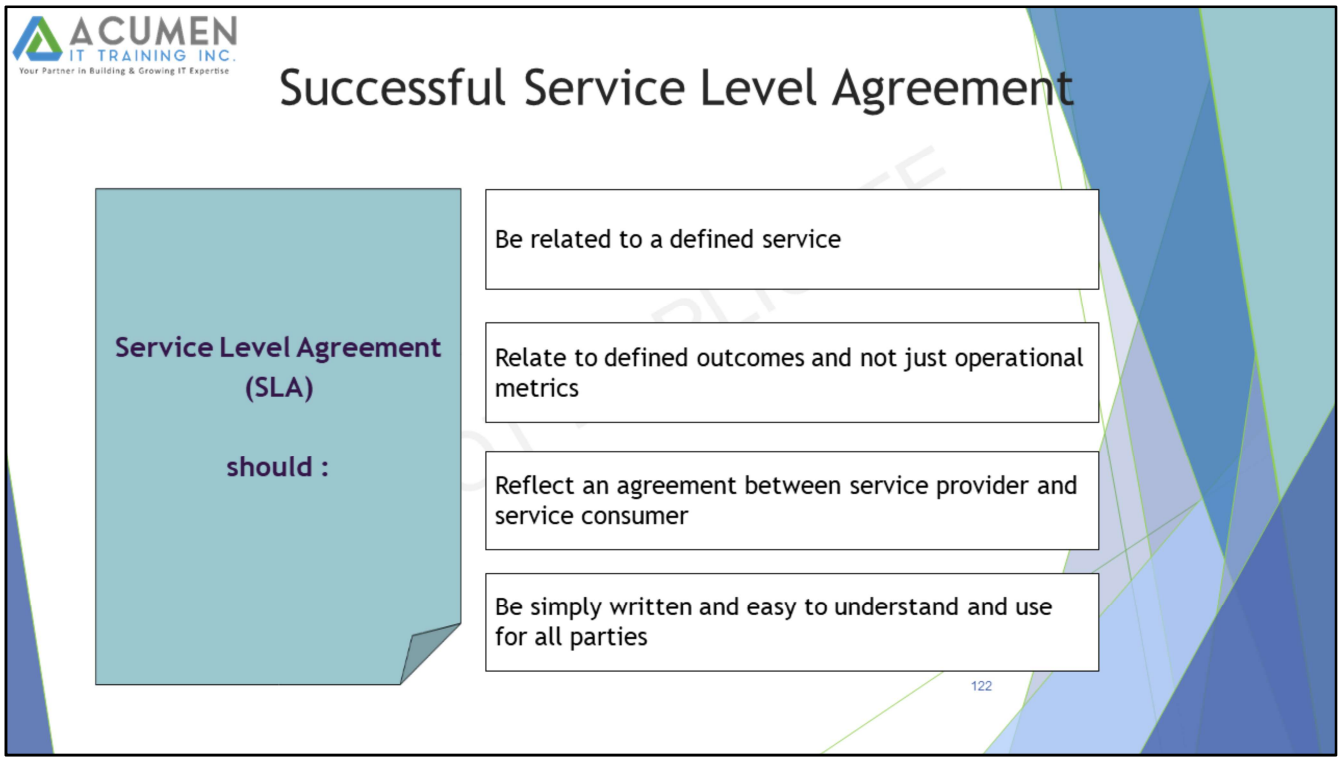
- establishes a shared view of the services and target service levels with customers
- ensures the organization meets the defined service levels through the collection, analysis, storage, and reporting of the relevant metrics for the identified services
- performs service reviews to ensure that the current set of services continues to meet the needs of the organization and its customers
- captures and reports on service issues, including performance against defined service levels.

Service level management requires focus and effort to engage and listen to the requirements, issues, concerns, and daily needs of customers:

- Engagement is needed to understand and confirm the actual ongoing needs and requirements of customers, not simply what is interpreted by the service provider or has been agreed several years before.
- Listening is important as a relationship-building and trust-building activity, to show customers that they are valued and understood. This helps to move the provider away from always being in 'solution mode' and to build new, more constructive partnerships.

Service level management involves collating and analysing information from a number of sources, including:

- *Customer engagement*: This involves initial listening, discovery, and information capture on which to base metrics, measurement, and ongoing progress discussions.
- *Customer feedback*: This is ideally gathered from a number of sources, both formal and informal, including Surveys **(event-based survey)** and key business-related measures.
- *Operational metrics*: These are the low-level indicators of various operational activities and may include system availability, incident response and fix times, change and request processing times, and system response times.
- *Business metrics*: These can be any business activity that is deemed useful or valuable by the customer and used as a means of gauging the success of the service. These can vary from some simple transactional binary measures such as ATM or POS terminal availability during business hours or successful completion of business activities such as passenger check-in.

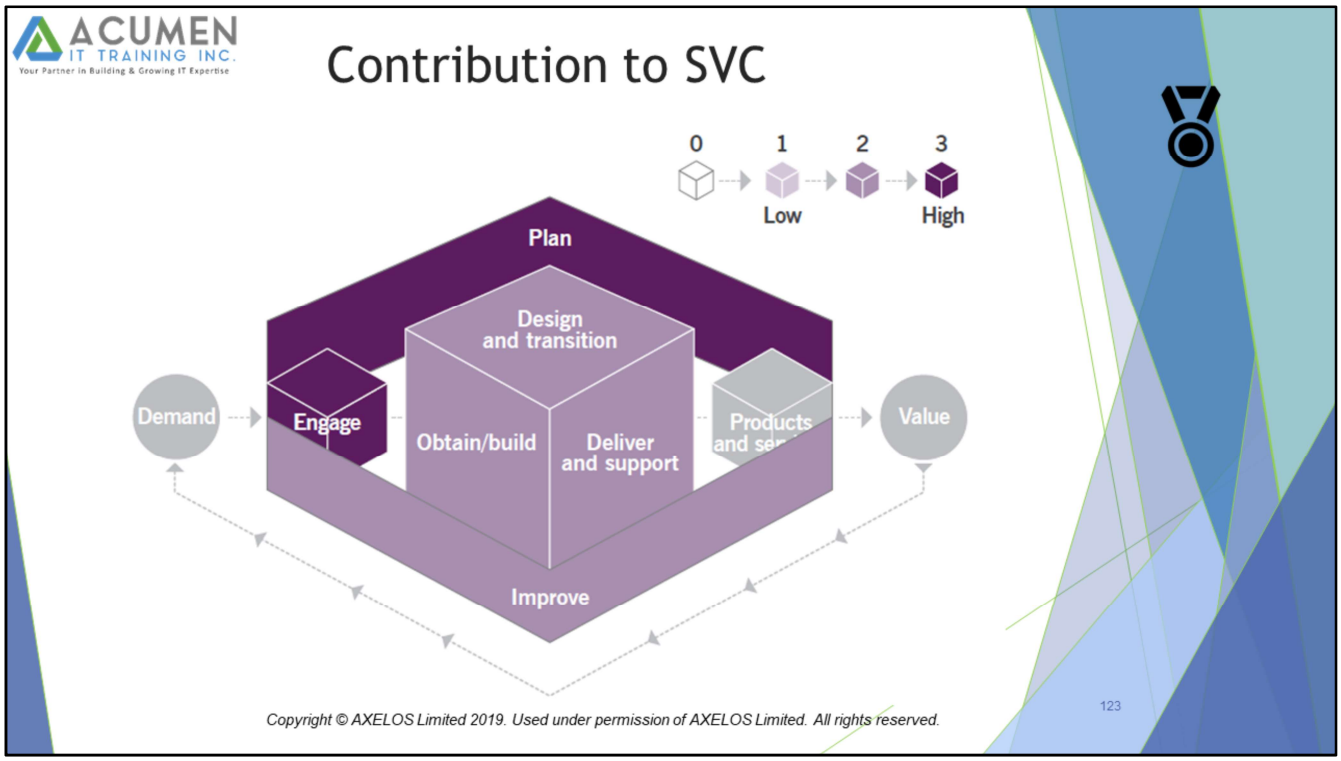


Service level agreement (SLA) is used as a tool to measure the performance of services from the customer's point of view, and it is important that they are agreed in the wider business context.

Some of the key requirements for successful SLAs include:

- They must be related to a defined 'service' in the service catalogue; otherwise they are simply individual metrics without a purpose, that do not provide adequate visibility or reflect the service perspective.
- They should relate to defined outcomes and not simply operational metrics. This can be achieved with balanced bundles of metrics, such as customer satisfaction and key business outcomes.
- They should reflect an 'agreement', i.e. engagement and discussion between the service provider and the service consumer. It is important to involve all stakeholders, including partners, sponsors, users, and customers.
- They must be simply written and easy to understand and use for all parties.

In many cases, using single-system-based metrics as targets can result in misalignment and a disconnect between service partners regarding the success of the service delivery and the user experience. For example, if an SLA is based only on the percentage of uptime of a service, it can be deemed to be successful by the provider, yet still miss out on significant business functionalities and outcomes which are important to the consumer. This is referred to as the '**watermelon SLA**' effect.



Above diagram depicts a heat map of the contribution of Service level management to value chain activities.

You can understand the contribution of Service level management to the service value chain, with the practice being involved in all value chain activities:

- Plan:

Service level management supports planning of the product and service portfolio and service offerings with information about the actual service performance and trends

- Improve:

Service feedback from users, as well as requirements from customers, can be a driving force for service improvement.

- Engage:

Service level management ensures ongoing engagement with customers and users through feedback processing and continual service review.

- Design and transition:

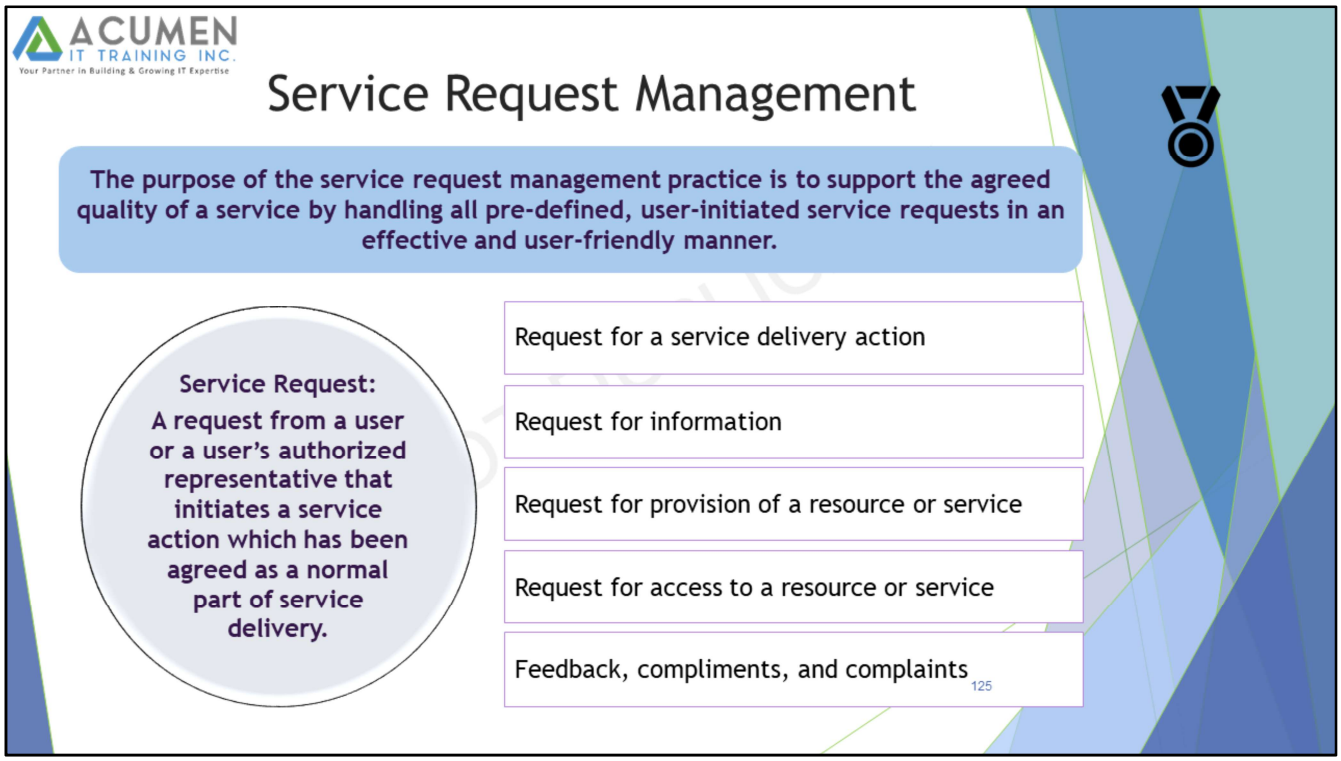
The design and development of new and changed services receives input from this practice, both through interaction with customers and as part of the feedback loop in transition.

- Obtain/build:

Service level management provides objectives for components and service performance, as well as for measurement and reporting capabilities of the products and services.

- Deliver and support:

Service level management communicates service performance objectives to the operations and support teams and collects their feedback as an input for service improvement.



Each service request may include one or more of the following:

- a request for a service delivery action (for example, providing a report or replacing a toner cartridge)
- a request for information (for example, how to create a document or what the hours of the office are)
- a request for provision of a resource or service (for example, providing a phone or laptop to a user, or providing a virtual server for a development team)
- a request for access to a resource or service (for example, providing access to a file or folder)
- feedback, compliments, and complaints (for example, complaints about a new interface or compliments to a support team).

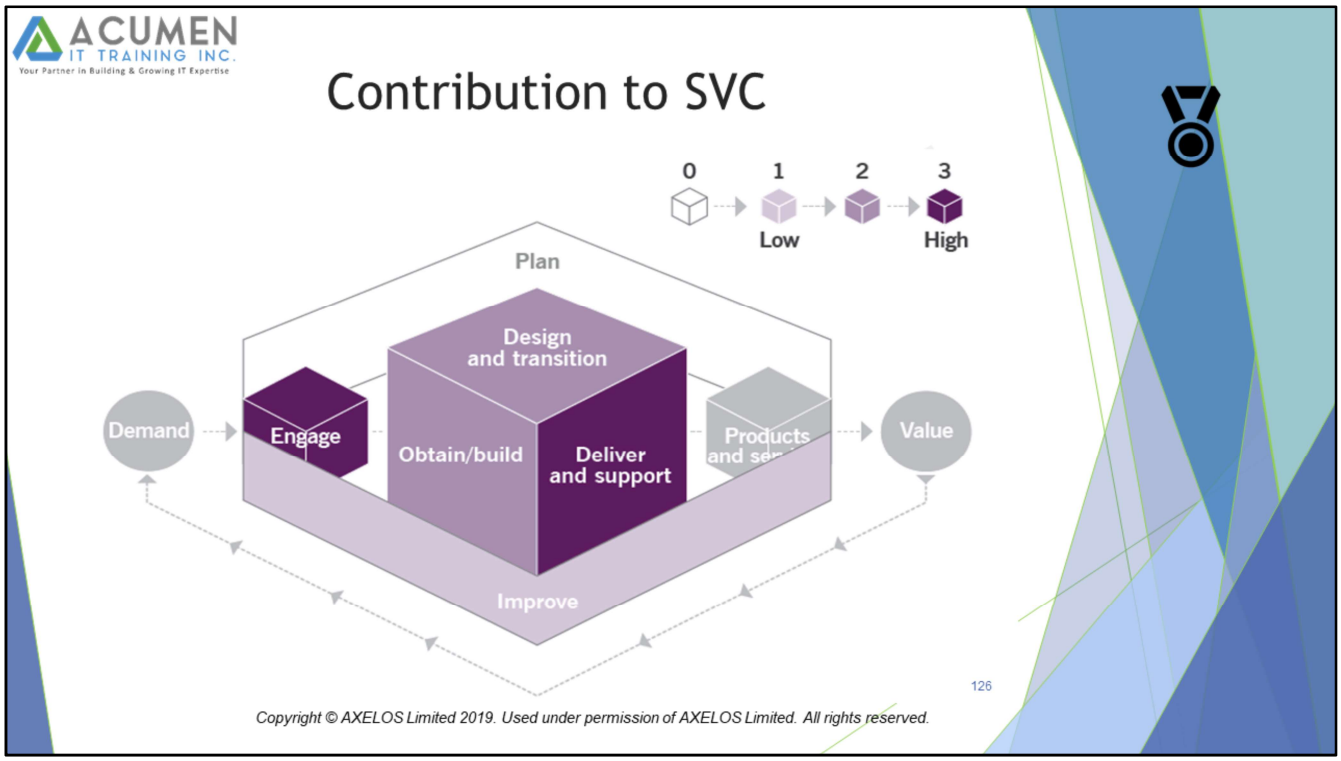
Fulfilment of service requests may include changes to services or their components; usually these are standard changes. Service requests are a normal part of service delivery and are not a failure or degradation of service, which are handled as incidents.

Since service requests are pre-defined and pre-agreed as a normal part of service delivery, they can usually be formalized, with a clear, standard procedure for initiation, approval, fulfilment, and management. Some service requests have very simple workflows, such as a request for information. Others, such as the setup of a new employee, may be quite complex and require contributions from many teams and systems for fulfilment.

Regardless of the complexity, the steps to fulfil the request should be well-known and proven. This allows the service provider to agree times for fulfilment and to provide clear communication of the status of the request to users.

Some service requests require authorization according to financial, information security, or other policies, while others may not need any.

Some service requests can be completely fulfilled by automation from submission to closure, allowing for a complete self-service experience. Examples include client software installation or provision of virtual servers.



Above diagram depicts a heat map of the contribution of Service request management to value chain activities.

You can understand the contribution of Service request management to the service value chain, with the practice being involved in all value chain activities:

- Improve:

Service request management can provide a channel for improvement initiatives, compliments, and complaints from users. It also contributes to improvement by providing trend, quality, and feedback information about fulfilment of requests.

- Engage:

Service request management includes regular communication to collect user-specific requirements, set expectations, and to provide status updates.

- Design and transition:

Standard service components may be transitioned to the live environment through service request fulfilment.

- Obtain/build:

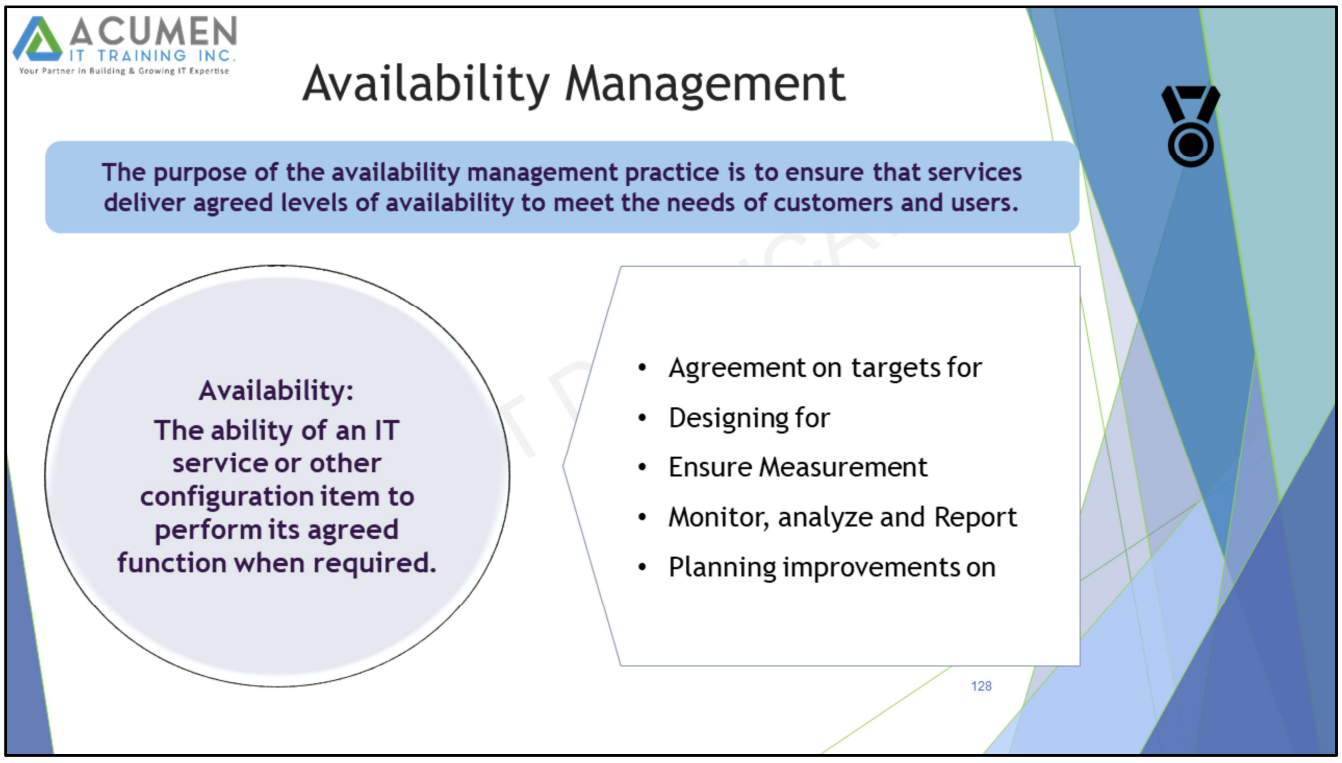
Acquisition of pre-approved service components may be fulfilled through service requests.

- Deliver and support:

Service request management makes a significant contribution to normal service delivery. This activity of the value chain is mostly concerned with ensuring users continue to be productive, and sometimes depends heavily on fulfilment of their requests.

In this section we will discuss 7 practices :

- Availability Management
- Capacity and Performance Management
- IT Asset Management
- Monitoring and Event Management
- Release Management
- Service Configuration Management
- Service Continuity Management

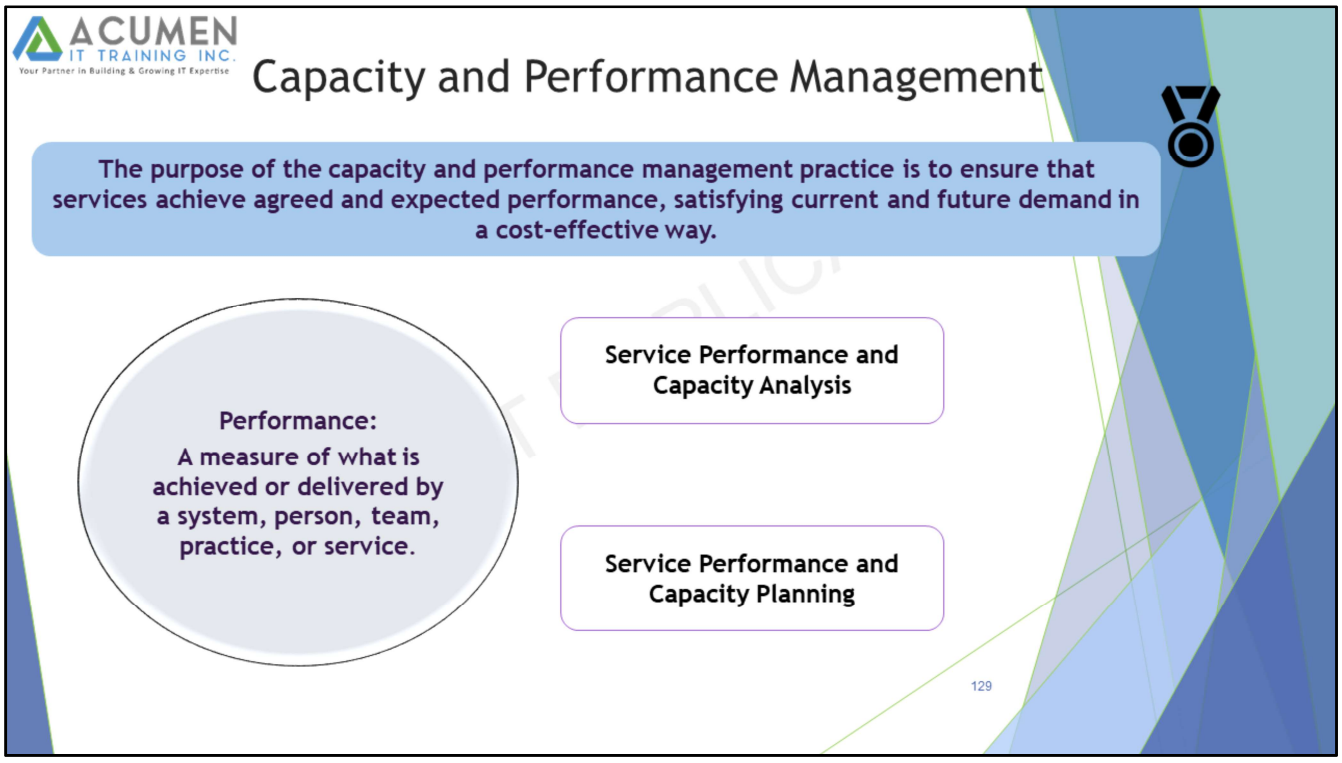


In the simplest terms, **the availability of a service depends on how frequently the service fails, and how quickly it recovers after a failure.**

The way that availability is defined must be appropriate for each service. **It is important to understand users' and customers' views on availability and to define appropriate metrics, reports, and dashboards.**

Most organizations do not have dedicated availability management staff. The activities needed are often distributed around the organization. Some organizations include availability management activities as part of risk Management, while others combine it with service continuity management or with capacity and performance management. Some organizations have site reliability engineers (SREs) who manage and improve the availability of specific products or services.

A process is needed for the regular testing of failover and recovery mechanisms. Many organizations also have a process for calculating and reporting availability metrics; however, availability management is driven as much by culture, experience, and knowledge as by following procedures.



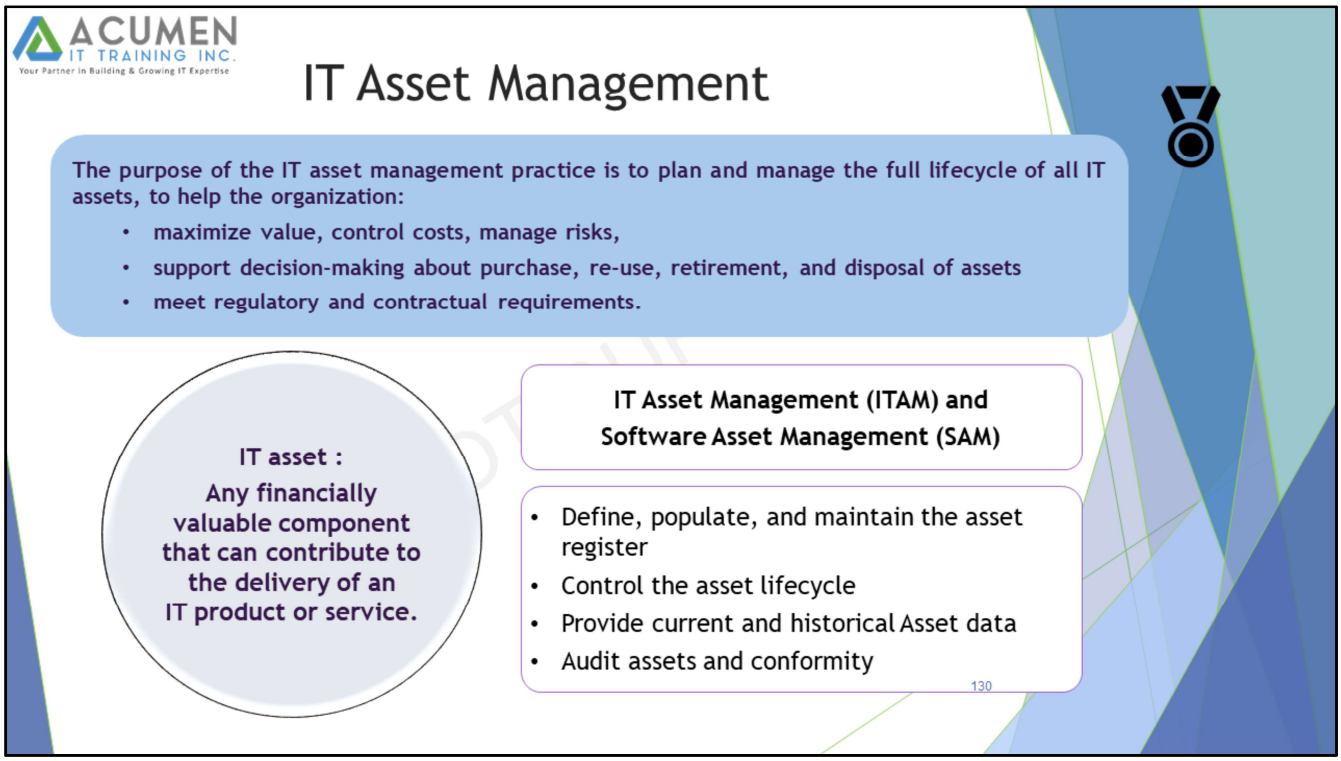
The capacity and performance management practice usually deals with service performance and the performance of the supporting resources on which it depends, such as infrastructure, applications, and third party services.

This practice may also cover the capacity and performance of the personnel in an organization.

Service performance is an important aspect of the expectations and requirements of customers and users, and therefore significantly contributes to their satisfaction with the services they use and the value they perceive.

Capacity and performance analysis and planning contributes to service planning and building, as well as to ongoing service delivery, evaluation, and improvement.

An understanding of capacity and performance models and patterns helps to forecast demand and to deal with incidents and defects.



The scope of **IT asset management typically includes all software, hardware, networking, cloud services, and client devices**. In some cases, it may also include non-IT assets such as buildings or information where these have a financial value and are required to deliver an IT service. IT asset management can include operational technology (OT), including devices that are part of the Internet of Things. These are typically devices that were not traditionally thought of as IT assets, but that now include embedded computing capability and network connectivity.

Asset management is a well-established practice that includes the acquisition, operation, care, and disposal of organizational assets, particularly critical infrastructure.

IT asset management (ITAM) is a sub-practice of asset management that is specifically aimed at managing the lifecycles and total costs of IT equipment and infrastructure.

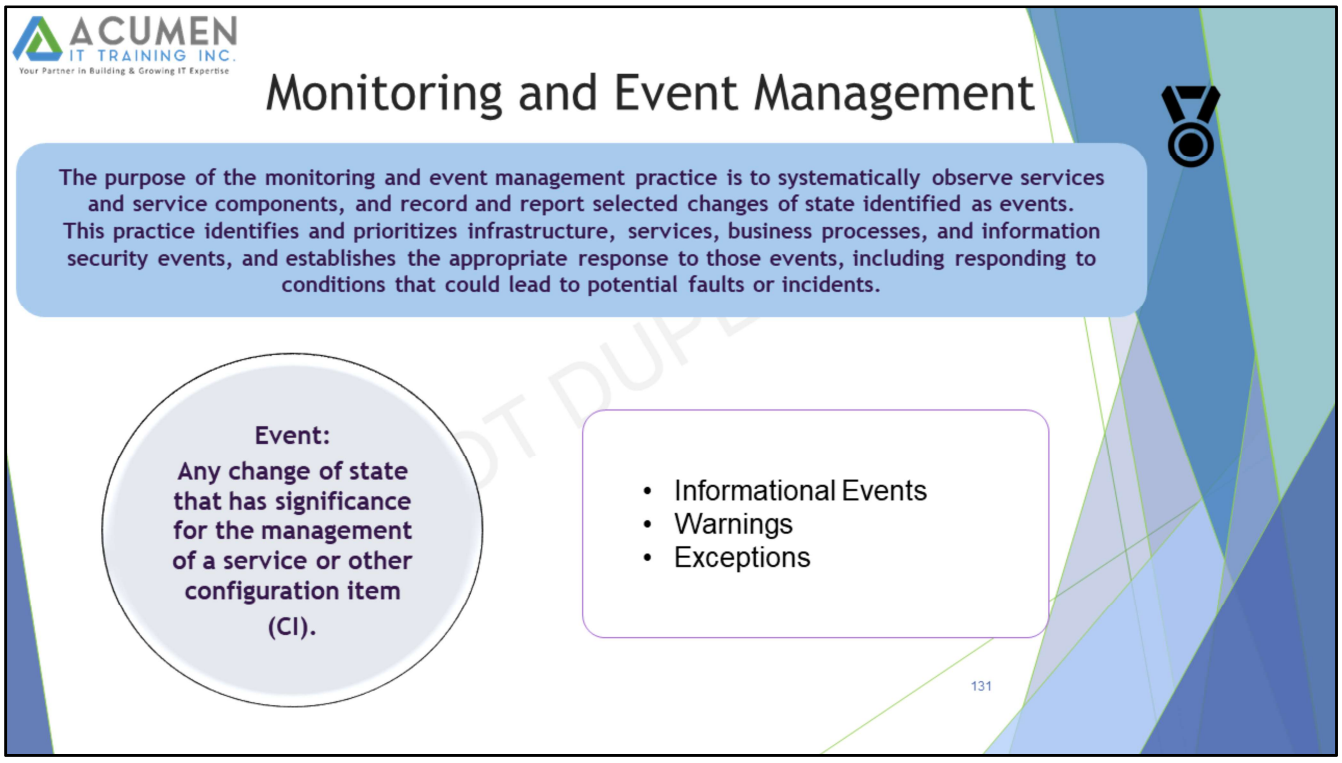
Software asset management (SAM) is an aspect of IT asset management that is specifically aimed at managing the acquisition, development, release, deployment, maintenance, and eventual retirement of software assets. SAM procedures provide effective management, control, and protection of software assets.

IT asset management requires accurate inventory information, which it keeps in an asset register. This information

can be gathered in an audit, but it is much better to capture it as part of the processes that change the status of assets, for example, when new hardware is delivered, or when a new instance of a cloud service is requested. If IT asset management has good interfaces with other practices, including service configuration management, incident management, change control, and deployment management, then the asset status information can be maintained with less effort.

IT asset management typically includes the following activities:

- Define, populate, and maintain the asset register in terms of structure and content, and the storage facilities for assets and related media
- Control the asset lifecycle in collaboration with other practices (for example, upgrading obsolete software or onboarding new staff members with a laptop and mobile phone) and record all changes to assets (status, location, characteristics, assignment, etc..)
- Provide current and historical data, reports, and support to other practices about IT assets
- Audit assets, related media, and conformity (particularly with regulations, and license terms and conditions) and drive corrective and preventive improvements to deal with detected issues.



The monitoring part of the practice focuses on the systematic observation of services and the CIs that underpin services to detect conditions of potential significance. Monitoring should be performed in a highly automated manner, and can be done actively or passively.

The event management part focuses on recording and managing those monitored changes of state that are defined by the organization as an event, determining their significance, and identifying and initiating the correct control action to manage them.

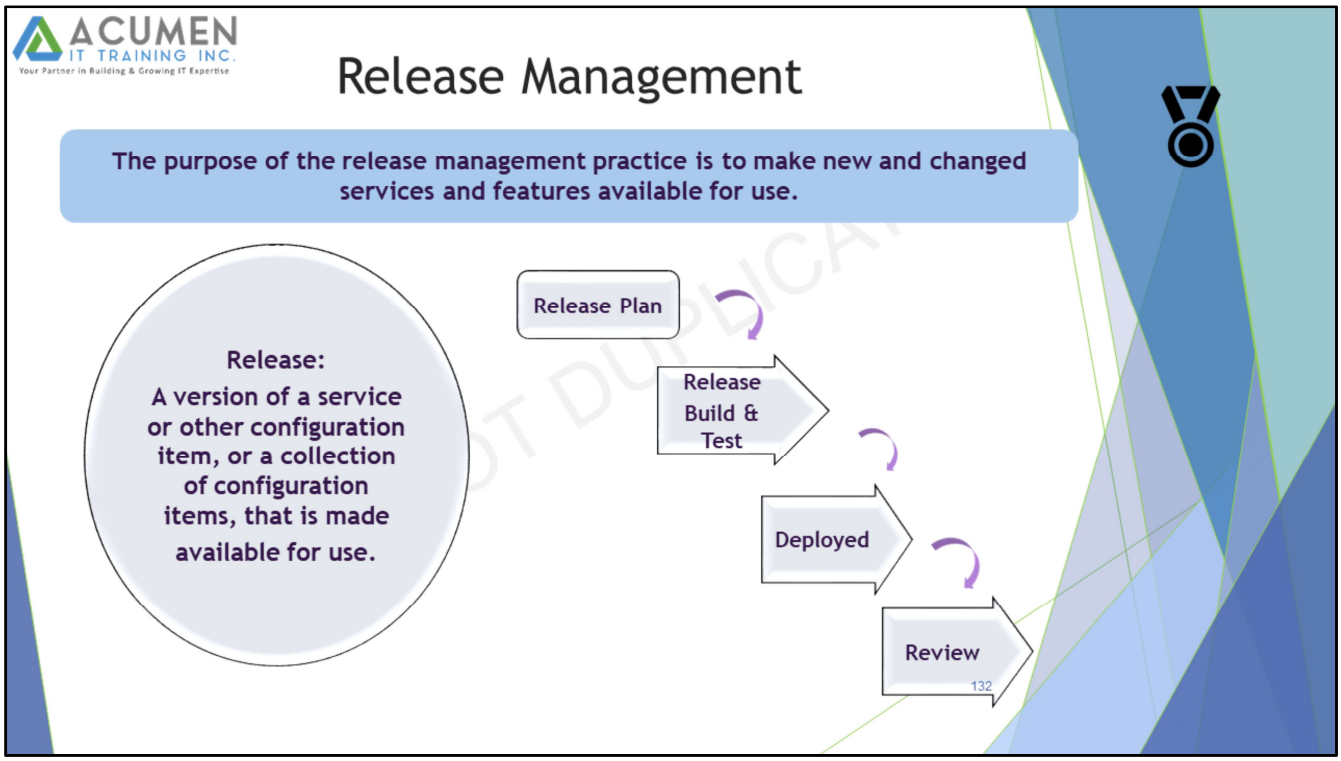
Frequently the correct control action will be to initiate another practice, but sometimes it will be to take no action other than to continue monitoring the situation.

Monitoring is necessary for event management to take place, but not all monitoring results in the detection of an event.

Not all events have the same significance or require the same response.

Events are often classified as *informational, warning, and exceptions*.

Informational events do not require action at the time they are identified, but analyzing the data gathered from them at a later date may uncover desirable, proactive steps that can be beneficial to the service. Warning events allow action to be taken before any negative impact is actually experienced by the business, whereas exception events indicate that a breach to an established norm has been identified (for example, to a service level agreement). Exception events require action, even though business impact may not yet have been experienced.



A release may comprise many different infrastructure and application components that work together to deliver new or changed functionality. It may also include documentation, training (for users or IT staff), updated processes or tools, and any other components that are required.

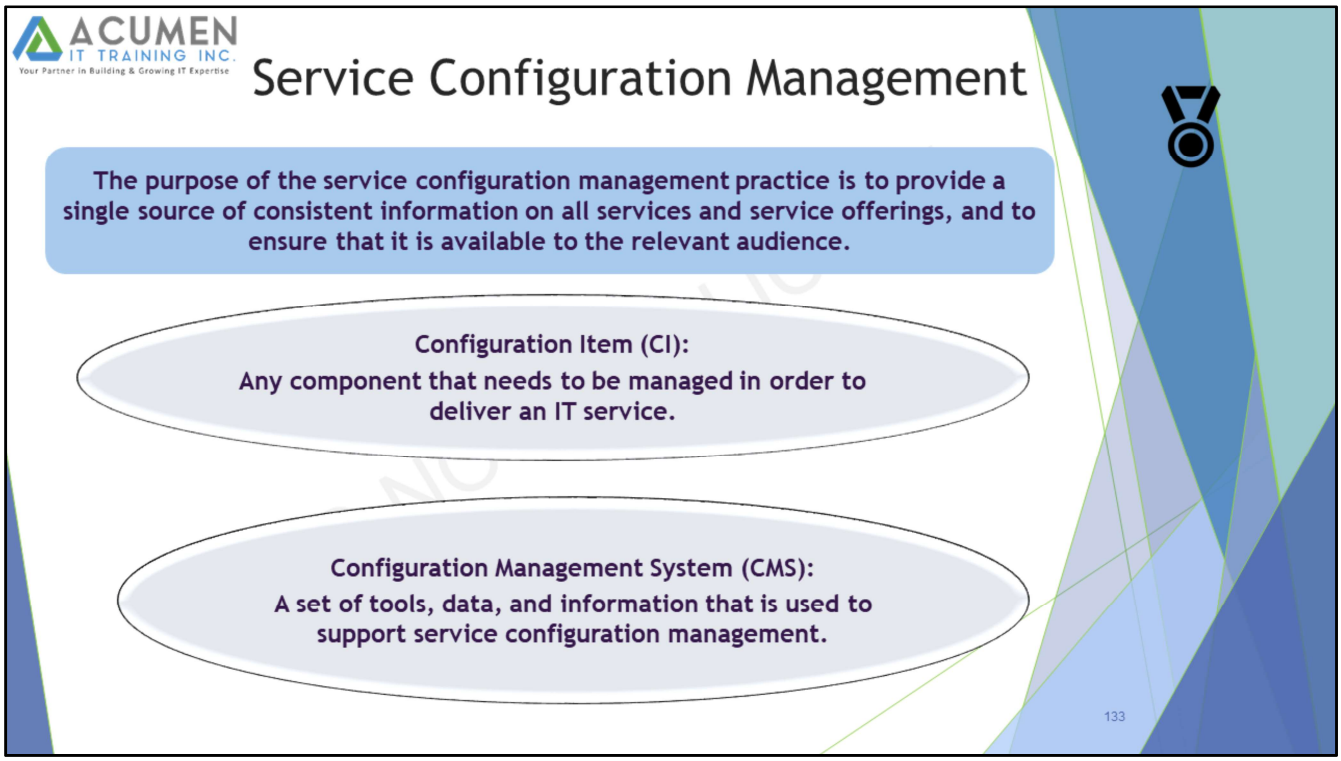
Each component of a release may be developed by the service provider or procured from a third party and integrated by the service provider.

In some environments, almost all of the release management work takes place before deployment, with plans in place as to exactly which components will be deployed in a particular release. The deployment then makes the new functionality available.

Release management is often staged, with pilot releases being made available to a small number of users to ensure that everything is working correctly before the release is given to additional groups.

In a DevOps environment, release management is often integrated with the continuous integration and continuous delivery toolchain. The tools of release management may be the responsibility of a dedicated person, but decisions about the release can be made by the development team.

In a more traditional environment, releases are enabled by the deployment of the components.



Service configuration management collects and manages information about a wide variety of CIs, typically including hardware, software, networks, buildings, people, suppliers, and documentation. Services are also treated as CIs, and configuration management helps the organization to understand how the many CIs that contribute to each service work together.

Configuration management provides information on the CIs that contribute to each service and their relationships: how they interact, relate, and depend on each other to create value for customers and users. This includes information about dependencies between services. This high-level view is often called a service map or service model, and forms part of the service architecture.

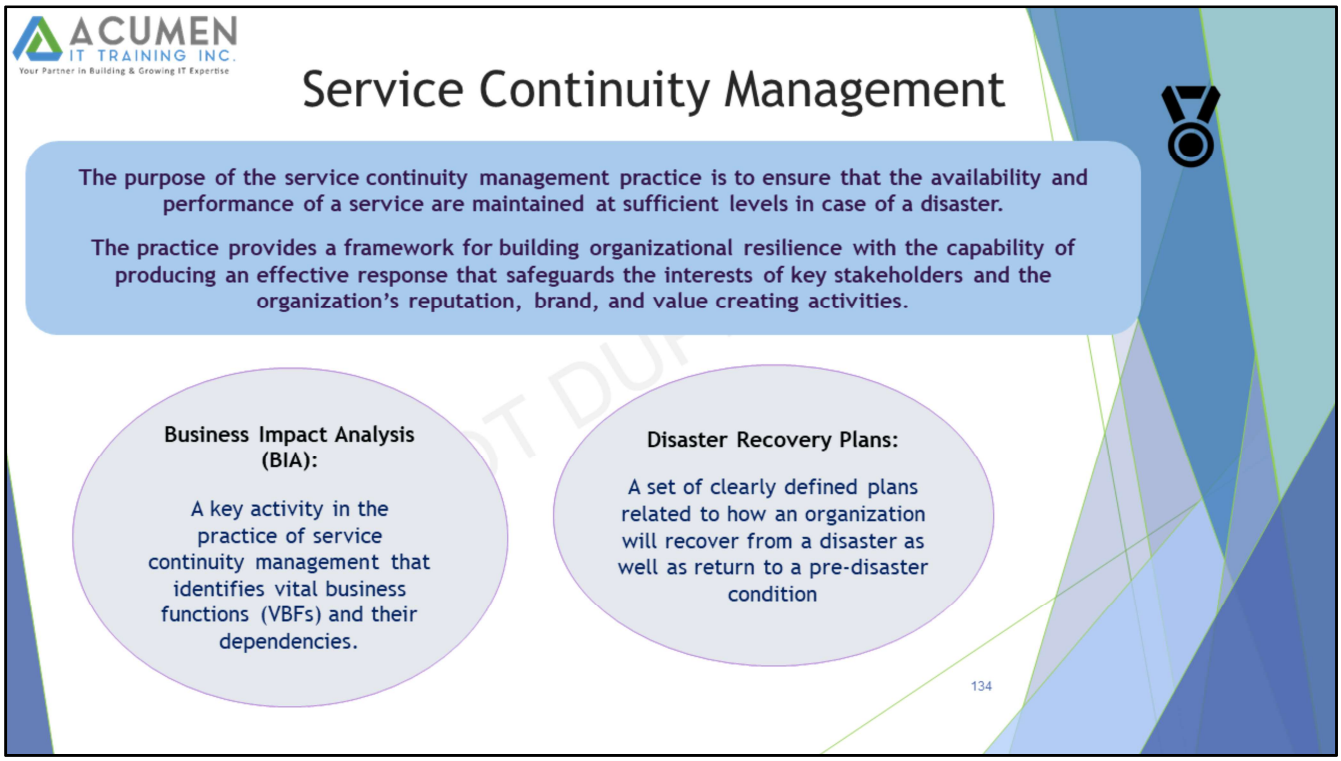
It is important that the effort needed to collect and maintain configuration information is balanced with the value that the information creates. Maintaining large amounts of detailed information about every component, and its relationships to other components, can be costly, and may deliver very little value.

The value created by configuration management is indirect, but enables many other practices to work efficiently and effectively.

Configuration information should be shared in a controlled way.

Configuration information can be stored and published in a single *configuration management database (CMDB)* for the whole organization, but it is more common for it to be distributed across several sources. The overall system is called the *Configuration Management System (CMS).*

In either case it is important to maintain links between configuration records, so that people can see the full set of information they need, and how the various CIs work together. Some organizations federate CMDBs to provide an integrated view. Others may maintain different types of data.



Service continuity management supports an overall business continuity management (BCM) and planning capability by ensuring that IT and services can be resumed within required and agreed business timescales following a disaster or crisis.

It is triggered when a service disruption or organizational risk occurs on a scale that is greater than the organization's ability to handle it with normal response and recovery practices such as incident and major incident management. An organizational event of this magnitude is typically referred to as a disaster. Each organization needs to understand what constitutes a disaster in its own context. Establishing what is meant by a disaster must be considered and defined prior to a trigger event at both an organizational and on a per-service level using a business impact analysis.

Some of the key terms under this practice are:

***Business impact analysis (BIA):* A key activity in the practice of service continuity management that identifies vital business functions (VBFs) and their dependencie**s. These dependencies may include suppliers, people, other business processes, and IT services. BIA defines the recovery requirements for IT services. These requirements include RTOs, RPOs, and minimum target service levels for each IT service.

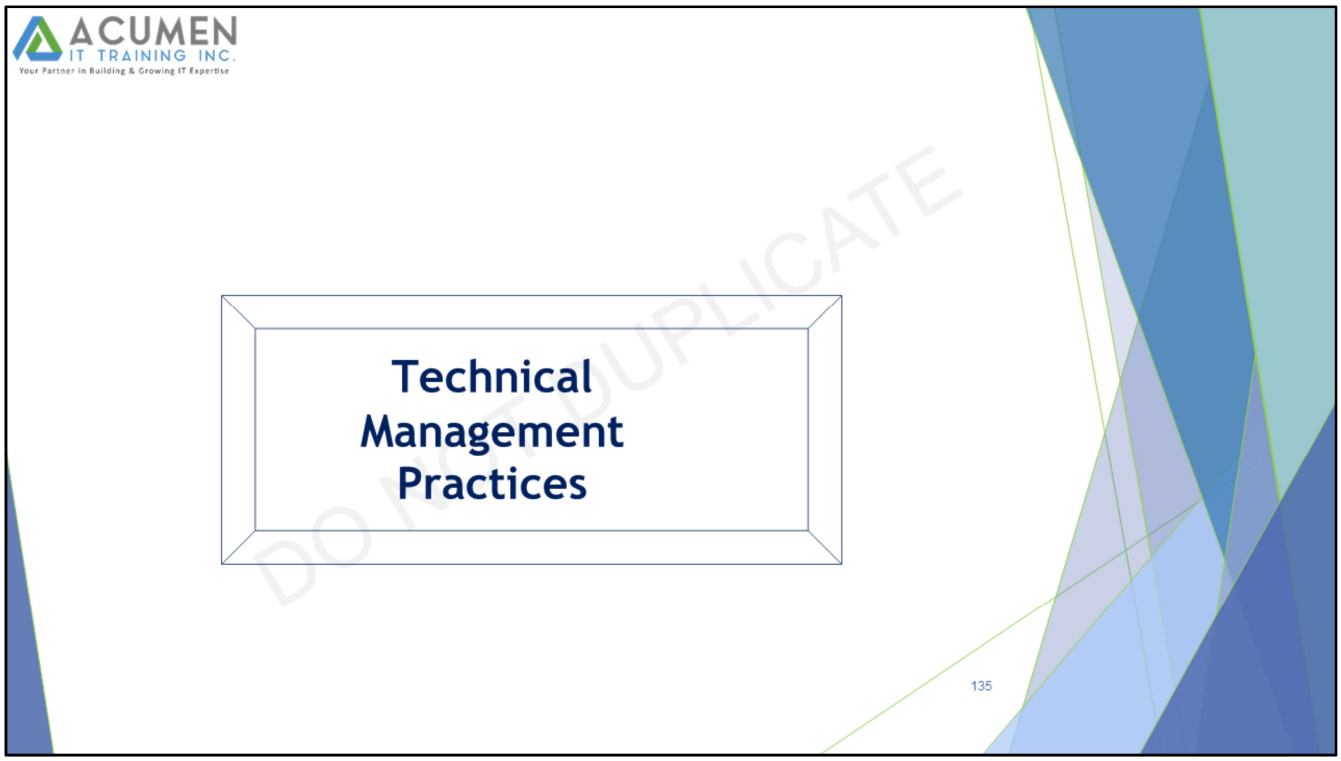
***Disaster recovery plans*: A set of clearly defined plans related to how an organization will recover from a disaster as well as return to a pre-disaster condition, considering the four dimensions of service management**.

***Recovery time objective (RTO):* The maximum acceptable period of time following a service disruption that can elapse before the lack of business functionality severely impacts the organization**. This represents the maximum agreed time within which a product or an activity must be resumed, or resources must be recovered.

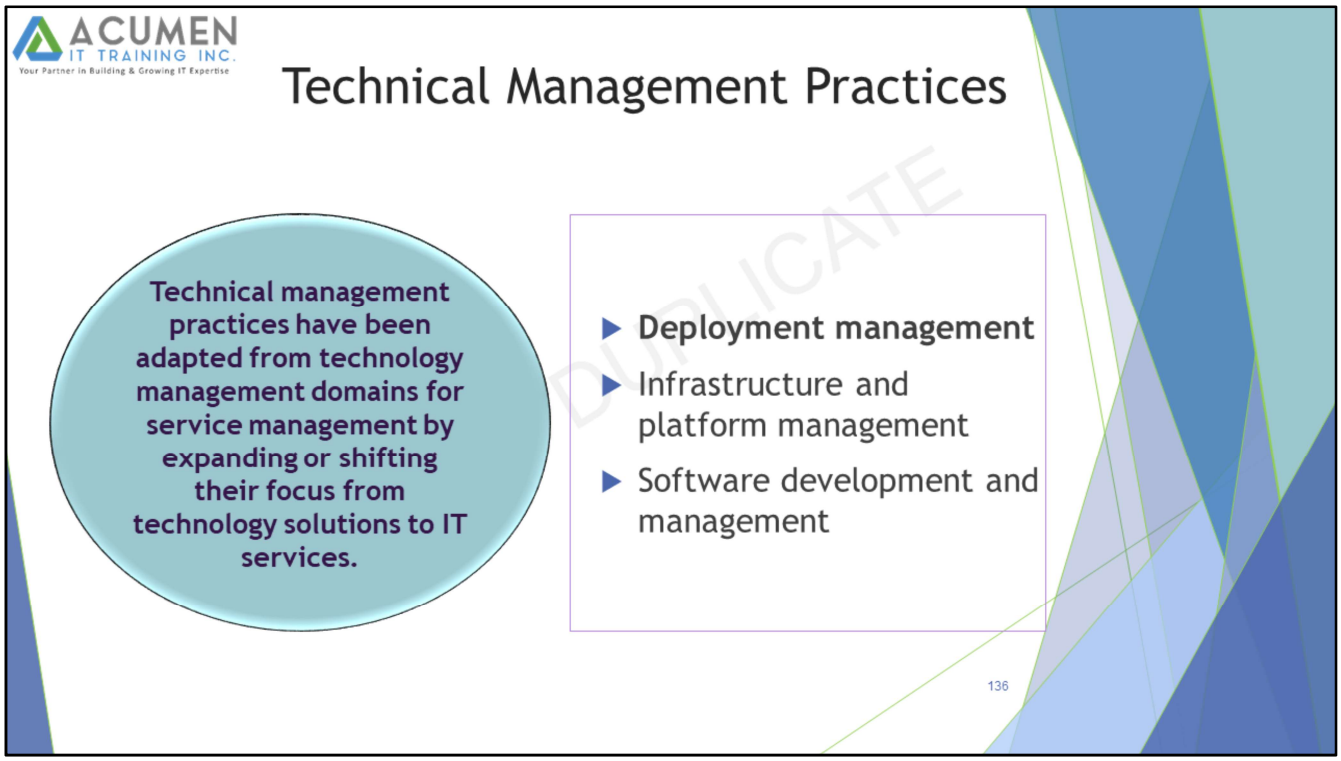
***Recovery point objective (RPO):* The point to which information used by an activity must be restored to enable the activity to operate on resumption.**

***Service continuity management versus incident management*:**

Service continuity management focuses on those events that the business considers significant enough to be treated as a disaster. Less significant events will be dealt with as part of incident management or major incident management. The distinction between disasters, major incidents, and incidents needs to be pre-defined, agreed, and documented with clear thresholds and triggers for calling the next tier of response and recovery into action without unnecessary delay and risk.

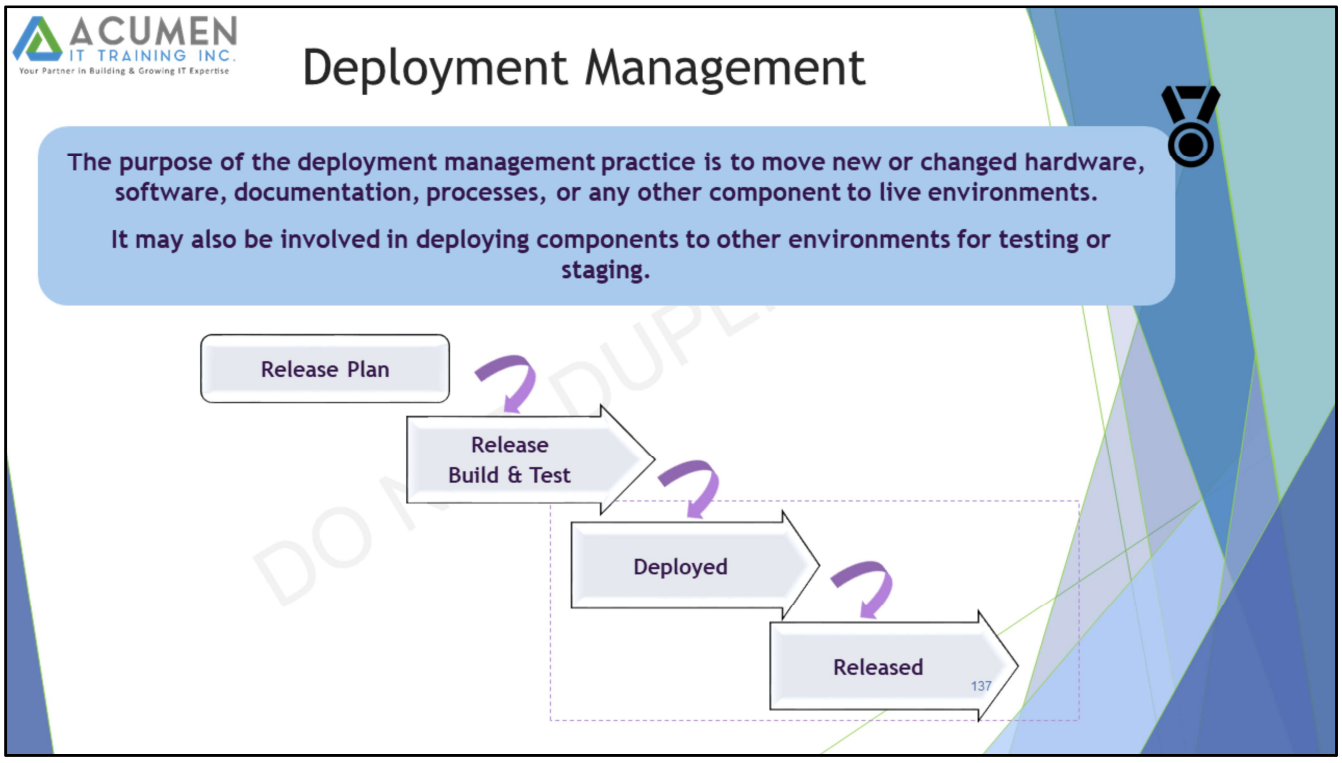


In this section we will cover Technical management practices of ITIL.



From the 17 Service management practices, at foundation level, we will be examining:

- Purpose of the Seven practices marked in BOLD as well as
- Six Practices (marked in BOLD and underlined) in detail.



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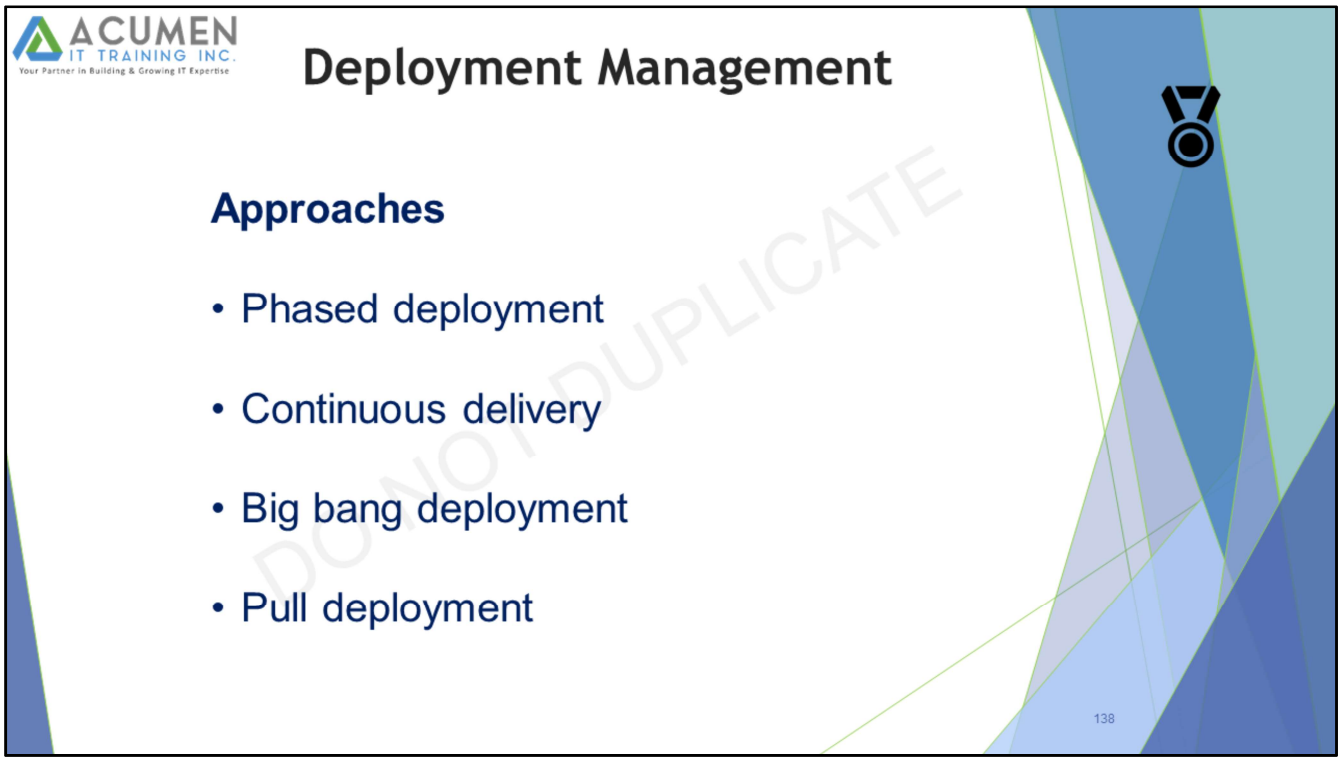

There are a number of distinct approaches that can be used for deployment. Many organizations use a combination of these approaches, depending on their specific services and requirements as well as the release sizes, types and impact.

• **Phased deployment** The new or changed components are deployed to just part of the production environment at a time, for example to users in one office, or one country. This operation is repeated as many times as needed until the deployment is complete.

• **Continuous delivery** Components are integrated, tested and deployed when they are needed, providing frequent opportunities for customer feedback loops.

• **Big bang deployment** New or changed components are deployed to all targets at the same time. This approach is sometimes needed when dependencies prevent the simultaneous use of both the old and new components. For example, there could be a database schema change that is not compatible with previous versions of some components.

• **Pull deployment** New or changed software is made available in a controlled repository, and users download the software to client devices when they choose. This approach enables users to control the timing of updates, and can be integrated with request management to enable users to request software only when it is needed.

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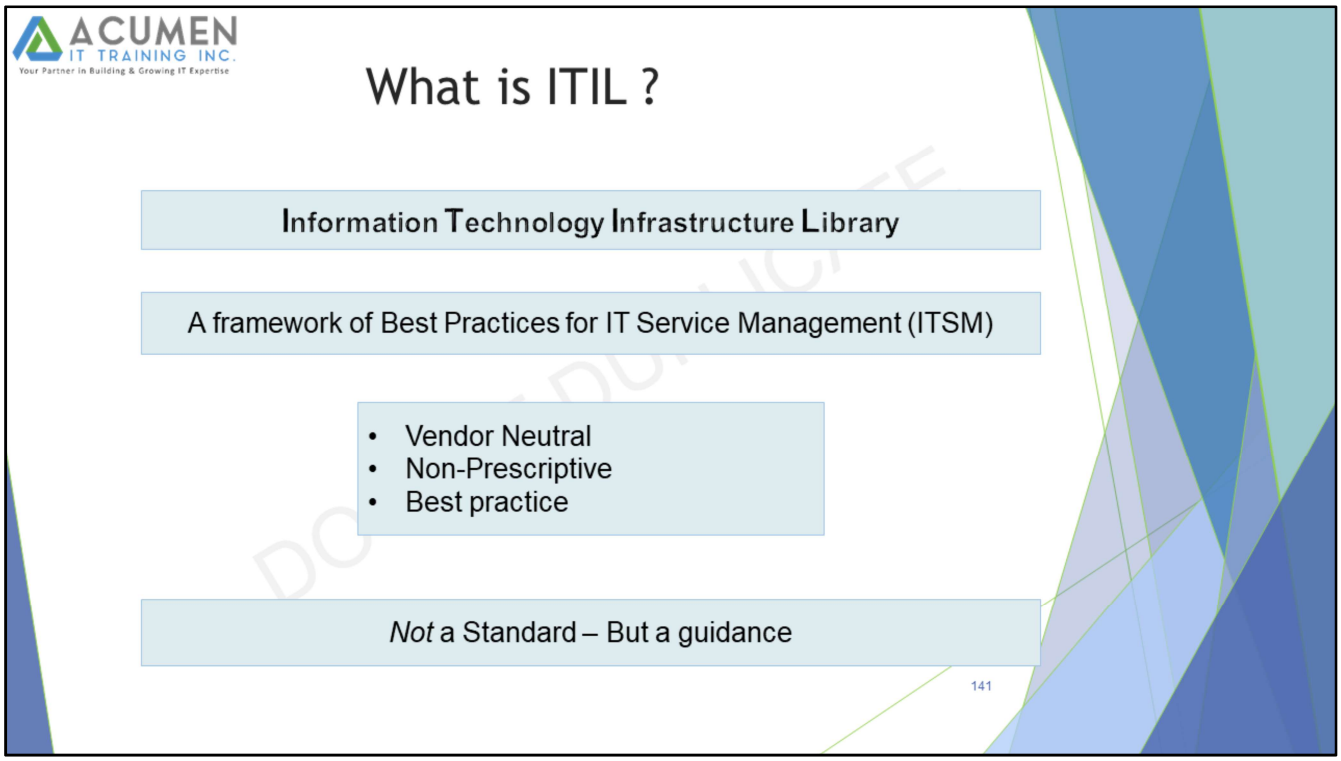
A look back...



ITIL has led the ITSM industry with guidance, training, and certification programmes for more than 30 years. ITIL 4 brings ITIL up to date by re-shaping much of the established ITSM practices in the wider context of customer experience, value streams, and digital transformation, as well as embracing new ways of working, such as Lean, Agile, and DevOps.

The success of ITIL® globally, can be attributed to the following aspects:

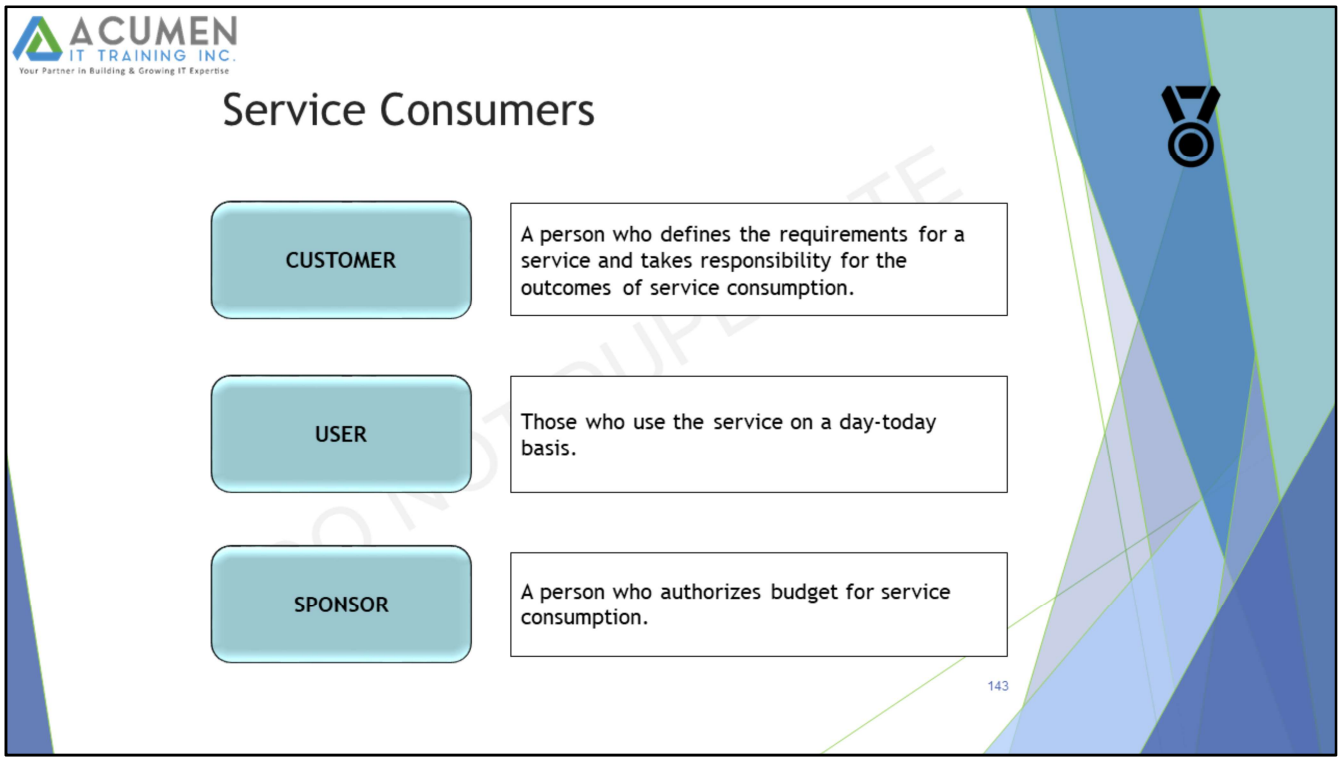
- **The framework being 'vendor neutral'. It is independent of any technology platform or tools**
- **Non-prescriptive approach – extending the guidance in a adoptable and adaptable model.**
- **Best practice reference – contains learning's and thought leadership across the globe**.

Organizations vary in size and complexity, and in their relation to legal entities – from a single person or a team, to a complex network of legal entities united by common objectives, relationships and authorities.

Broadly, **ITIL classifies the Organizations into three categories, as shown here:**

- **Service Consumers**
- **Service Providers and**
- **Other stake holders.**

These categories are further elaborated in later sections.



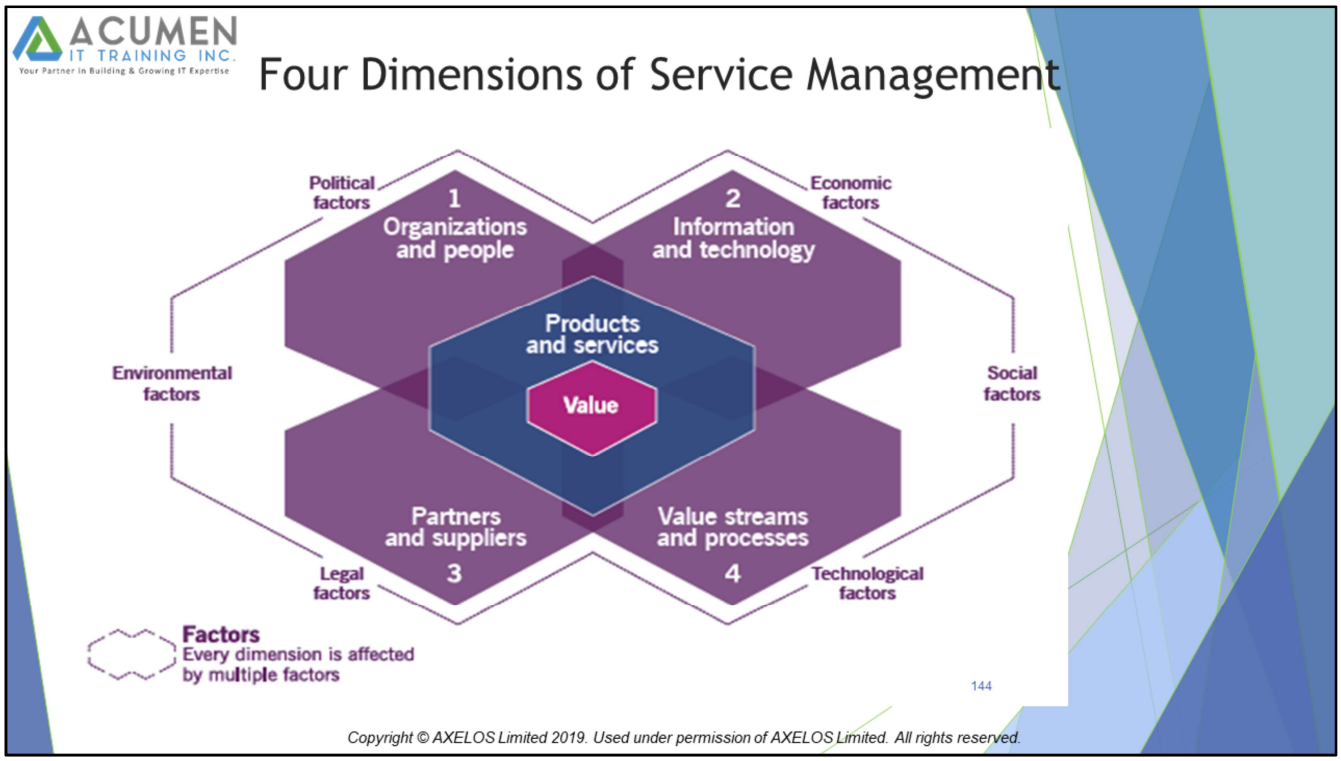
When receiving services, an organization takes on the role of the service consumer.

Service consumer is a generic role that is used to simplify the definition and description of the structure of service relationships.

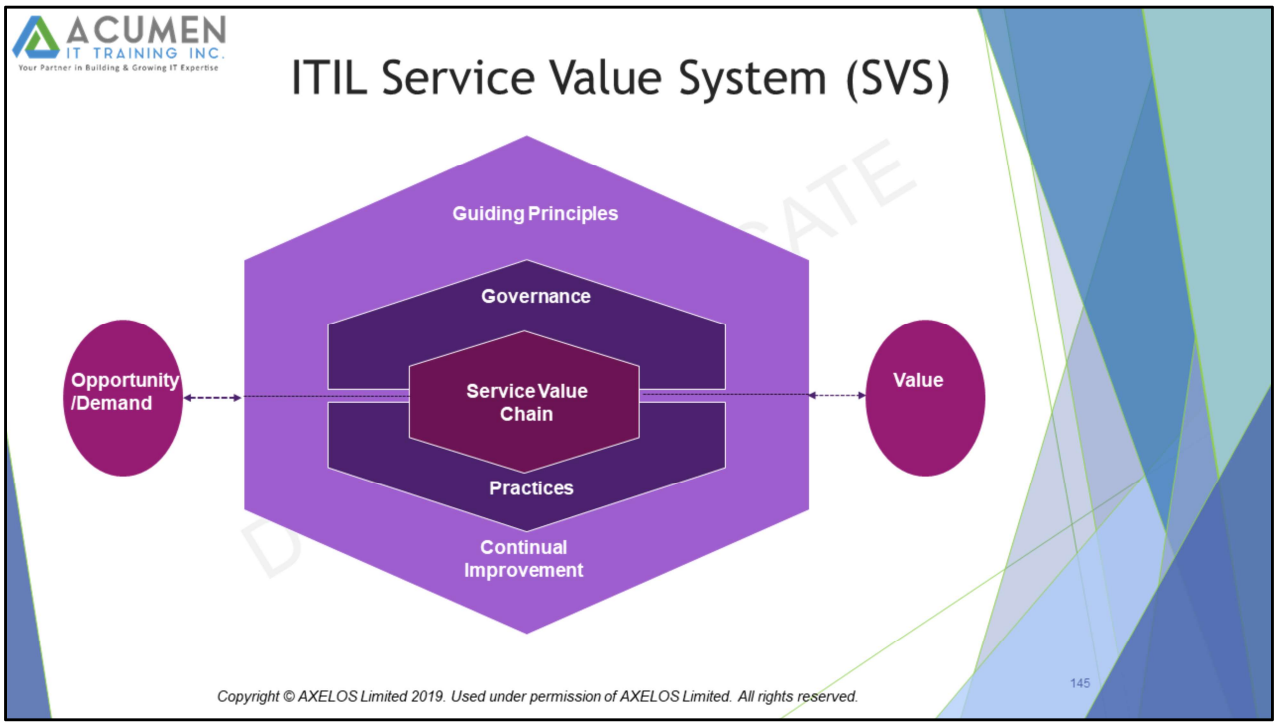
In practice, there are more specific roles involved in service consumption, such as customers, users, and sponsors. These roles can be separate or combined.

The customer of an IT service provider is the person or group who defines and agrees the service level targets.

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



To support a holistic approach to service management, ITIL defines four dimensions, which are influenced by multiple external factors that are depicted in the above diagram.



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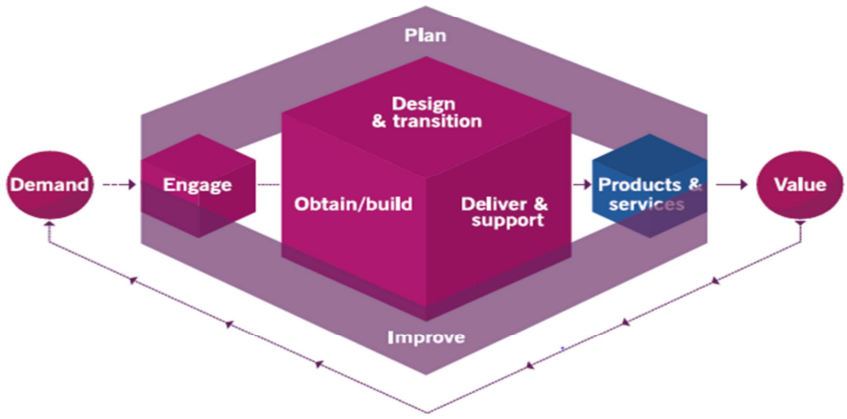
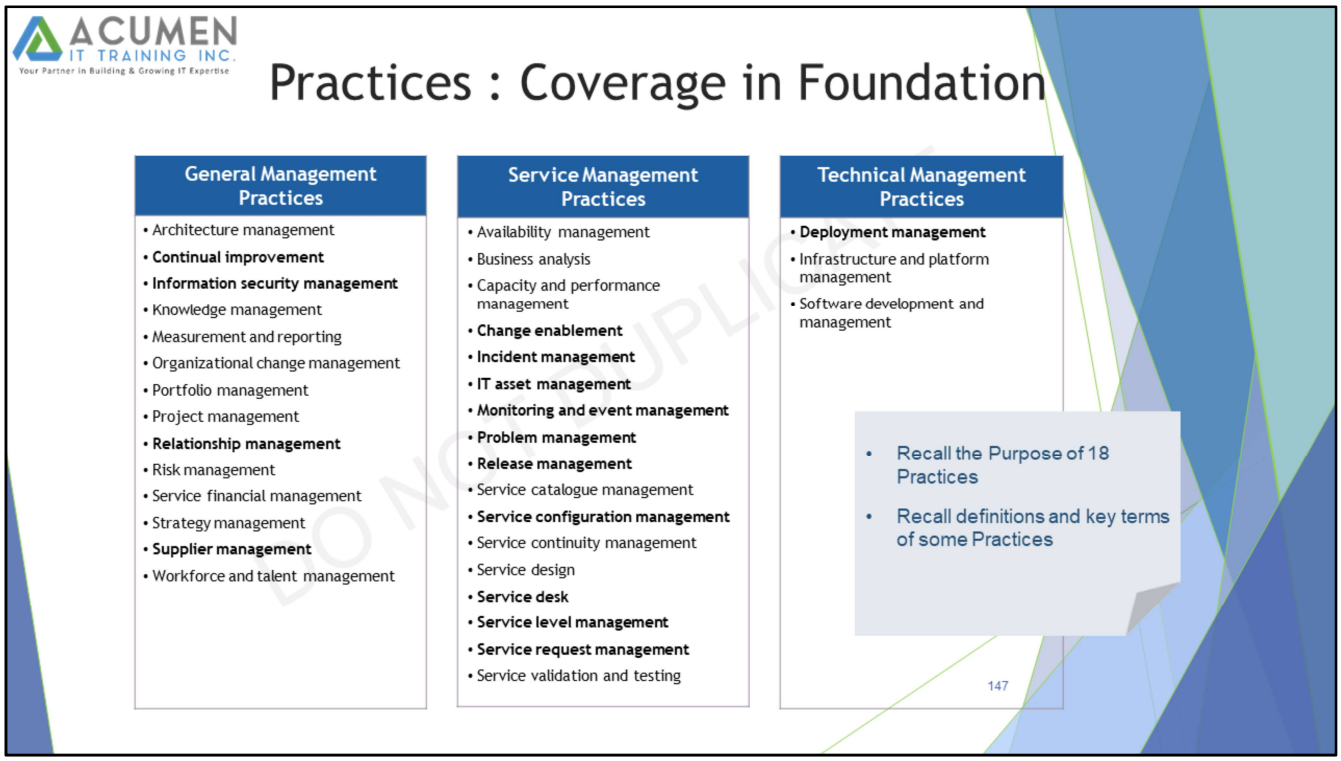
Service Value Chain (SVC)

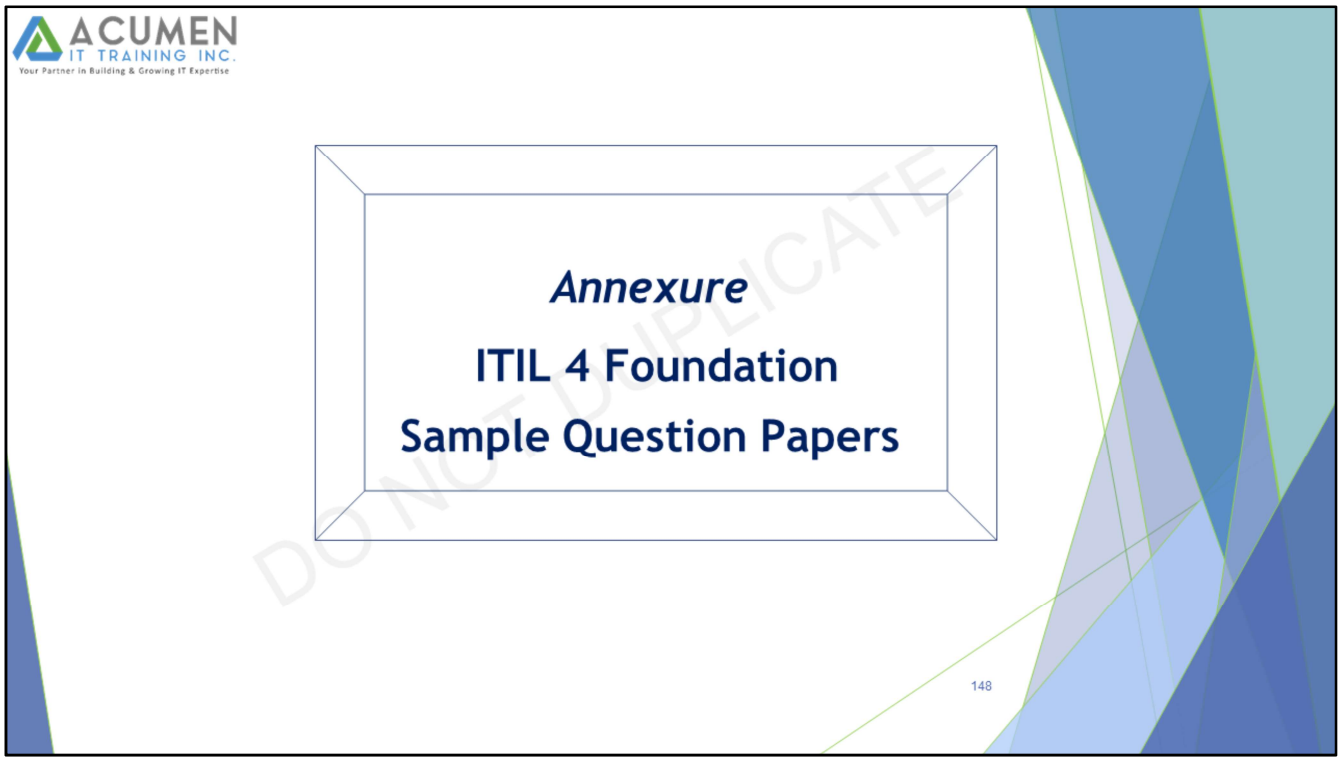


Application of ITIL across the service value chain



Out of the total 34 ITIL management practices, 18 of them marked in bold are the ones we will be seeing in the ITIL foundation level.

The participants for ITIL foundation level are expected to recall the purpose of these 18 practices, and some key terms and definitions including Availability, IT Asset, Event, Configuration Item, Change, Incident, Problem, Known error etc.



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MODULE-1: Key Concepts of Service Management

1. ITIL® is characterized as:

a. An international standard

b. Guidance framework

c. A qualification scheme

d. Academic research

2. The core components of the ITIL SVS are:

a. Service value chain

b. Governance

c. Guiding principles

d. All the above

3. The first form of ITIL framework was established by _____.

a. UK government Agency of Commerce

b. Ireland government Agency of Commerce

c. UK government Agency of Information Technology

d. None of the above

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Answers to Module-1 : 1. (b) 2. (d) 3. (a)

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MODULE-2: 4 Dimensions of Service Management

1. Which of the following is NOT correct among four dimensions of ITIL?
   a. Value chain and Processes
   b. Partners and Suppliers
   c. Information and Technology
   d. Organizations and People

2. In ITIL, _____ is the person or group who defines and agrees service level targets.
   a. User
   b. Supplier
   c. Customer
   d. Sponsor

3. Service Offering may include one or more of _____.
   a. Goods
   b. access to resources
   c. service actions
   d. All the above

Answers to Module-2 : 1. (a) 2. (c) 3. (d)

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MODULE-3: ITIL Service Value System

1. Which of these form core components of the ITIL SVS?
   a. Service value chain
   b. Governance
   c. Guiding principles
   d. All the above

2. Which of these is NOT an element of ITIL Service Value System?
   a. Governance
   b. Opportunity & Demand
   c. Service Value Chain
   d. Guiding Principles

3. The ITIL service value chain (SVC) activities are triggered by:
   a. Demand
   b. Governance
   c. Resources
   d. Value

Answers to Module-3 : 1. (d) 2. (b) 3. (a)

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MODULE-4: ITIL Guiding Principles

1. Which of the following is NOT a Guiding principle in ITIL framework?
   a. Optimize and Innovate
   b. Think and work holistically
   c. Focus on value
   d. Keep it simple and practical

2. Which of these statements BEST describes the right way to apply ITIL Guiding principles?
   a. Guiding principles should be applied for best outcome
   b. Guiding Principles interact with and depend upon each other
   c. Organizations should use just one or two of the principles
   d. Organizations should apply principles in order of priority

3. Which of these statements describes the purpose of ITIL SVS?
   a. to ensure that organization continually creates value for customers
   b. to ensure that organization continually creates profit and efficiency
   c. to ensure that organization continually co-creates value with all stakeholders
   d. None of the above

Answers to Module-4 : 1. (a) 2. (b) 3. (c)

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MODULE-4: Introduction to ITIL Practices

1. Which of the options below are categories of ITIL Practices?

a. General management practices
b. Service management practices
c. Technical management practices
d. All the above

a.

2. Which of these is NOT a Technical management practice in ITIL framework?

a. Deployment management
b. Supplier Management
c. Infrastructure and platform management
d. Software development and management

3. Which of these statements gives definition of Practice in the ITIL framework?

a. a set of organizational resource designed for performing work
b. organizational resources designed for accomplishing an objective
c. a series of steps an organization undertakes to enable outcomes
d. None of the above

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Answers to Module-5 : 1. (d) 2. (b) 3. (b)