ITIL® 4 Overview

- Introduction to ITIL
- Key Concepts of ITIL

What is ITIL?

__ITIL__ is best practice guidance for IT service management.

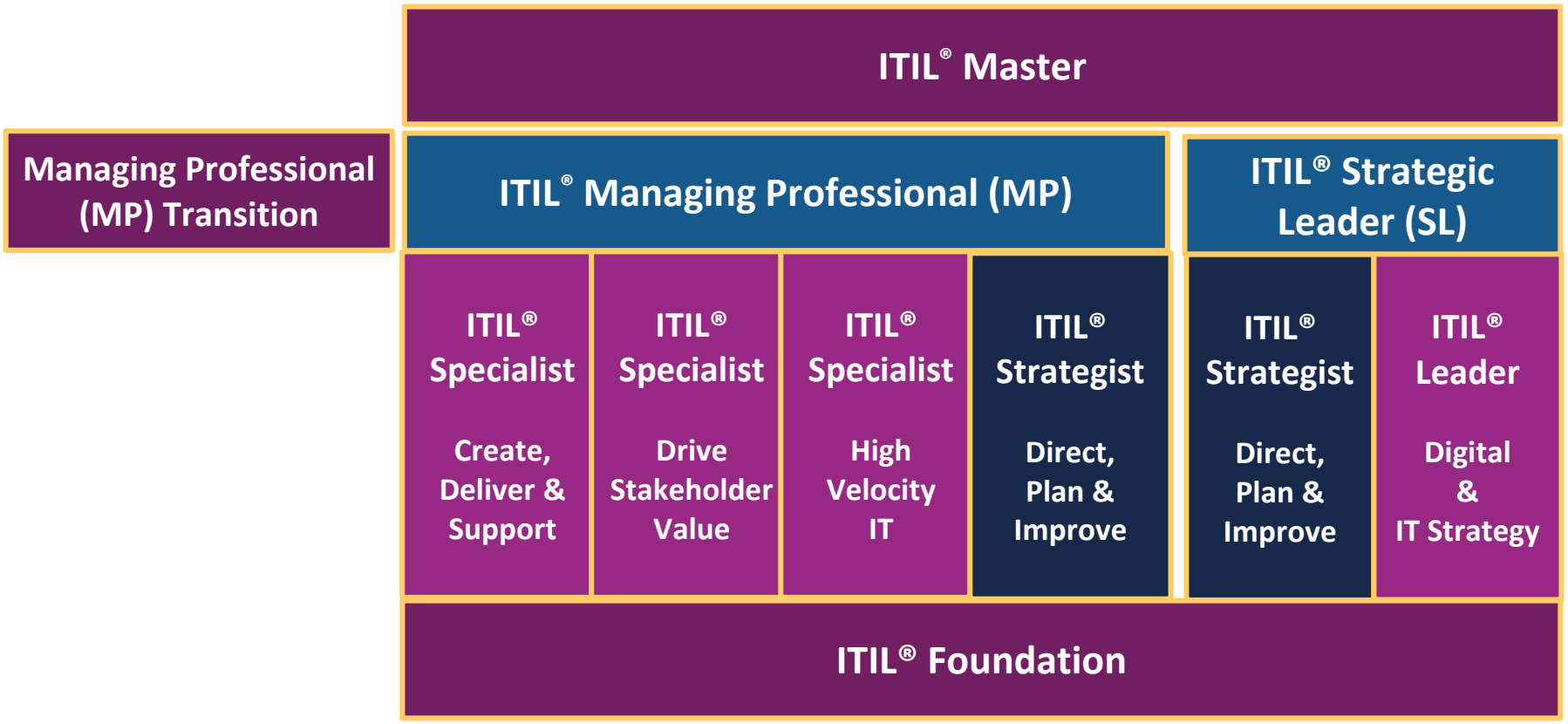
Brief history of ITIL:

- Began in England in the late 1980s.
- In 1997, ITIL books were condensed to seven books.
- In 2007, version 3 was released as five core books—one for each stage of the Service Lifecycle.
- In 2011, the guidance was revised without a version number change.
- In 2019, version 4 was released, and the ITIL framework has been revised as described in this course.

Organizations Involved in Maintaining ITIL

Organization	Role
itSMF	The IT Service Management Forum (itSMF) is a global non-profit organization that supports IT service management, particularly through publications in the ITSM Library series.
AXELOS	AXELOS is the organization responsible for developing and managing a portfolio of best practice methodologies, including ITIL. AXELOS is responsible for defining the ITIL exams, qualification schemes, and certification systems; publishing the core ITIL books, an ITIL 4 Foundation reference publication, and associated syllabi; and accrediting the Examination Institutes.
PEOPLECERT	The official Examination Institute (EI); and as of January 1, 2018, the only organization that is accredited by AXELOS for the delivery of the ITIL exams.

ITIL 4 Certification Scheme



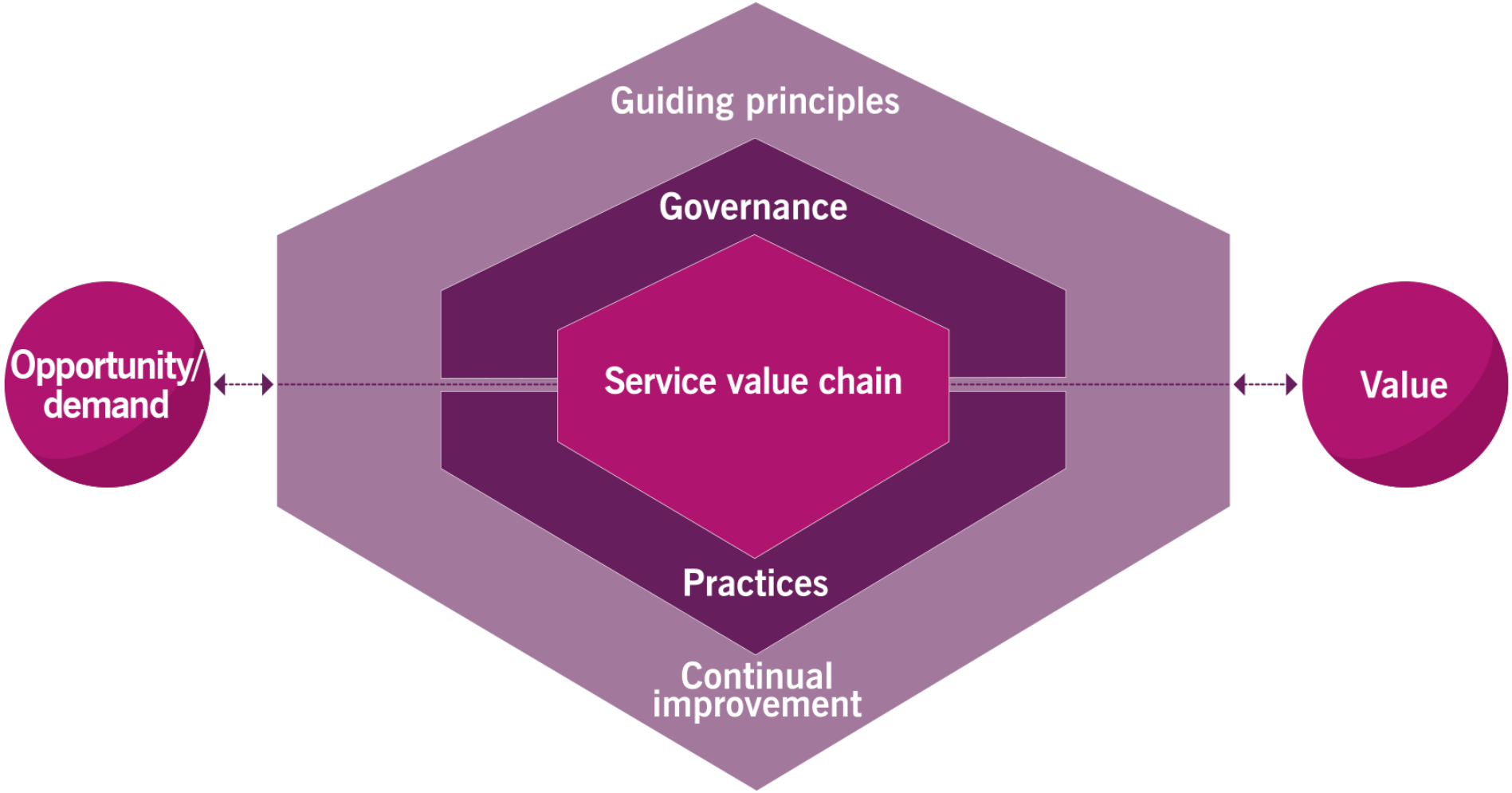
ITIL Today

- Services drive value.
  - For service providers
  - For customers
- Organizations are changing.
  - Need for speed
  - Need for cross-functional collaboration
- Digital transformation is creating new business models.
- ITIL 4 reflects updates to best practices to support:
  - Customer experience
  - Value streams
  - New ways of working
    - Agile
    - Lean
    - DevOps

Benefits of ITIL

- Offers industry-proven best practices to IT service management.
- Updated to reflect newly emerging practices.
- Reflects business needs to:
  - Balance agility and stability.
  - Create new revenue streams and sources of competitive advantage.
  - Support new digital business models.

Diagram of the ITIL Service Value System

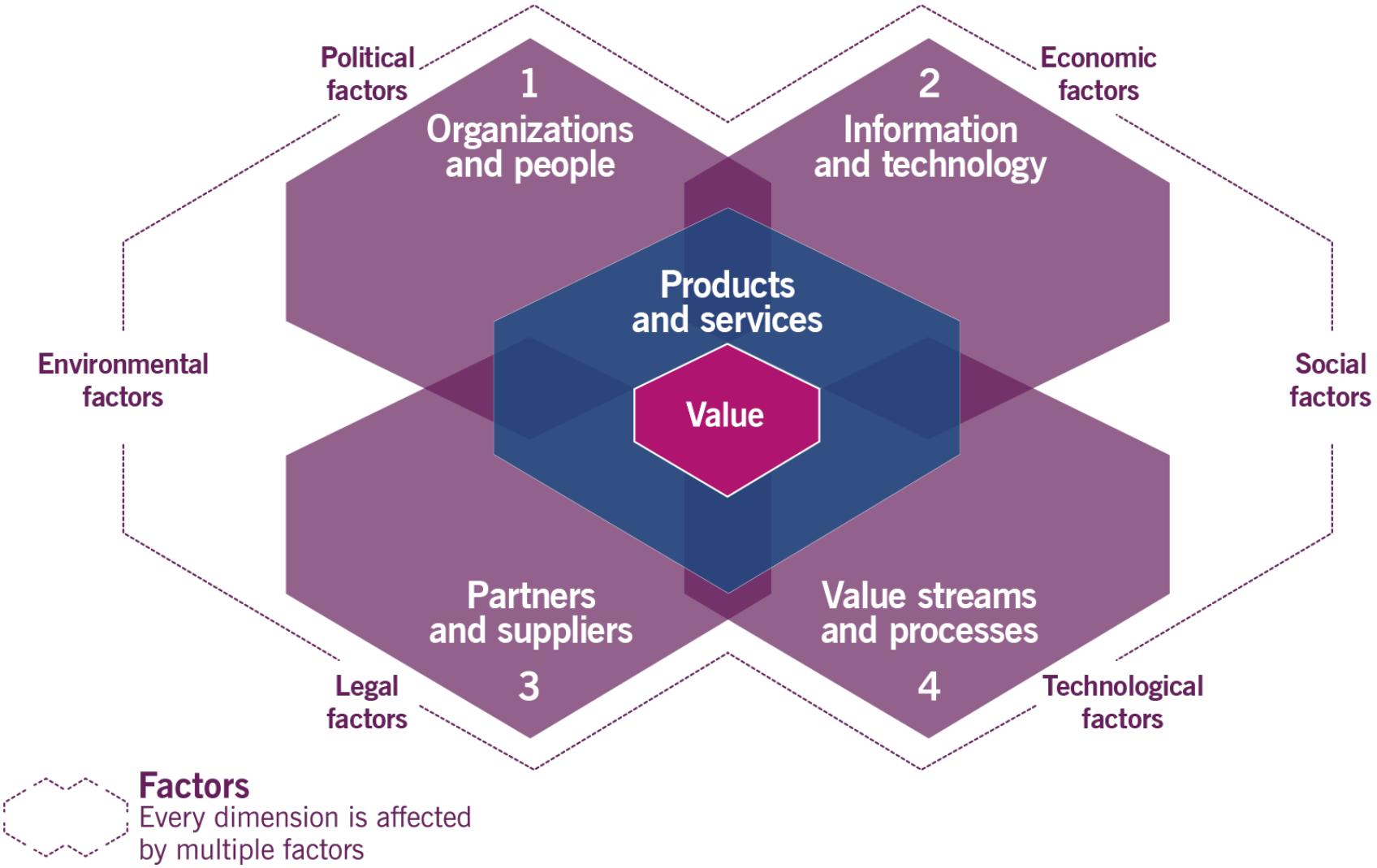


Components of the ITIL Service Value System

***SVS**: A model representing how all the components and activities of an organization work together to facilitate value creation.*

Component	Description (taken from *ITIL 4 Glossary*)
ITIL service value chain	An operating model for service providers that covers all the key activities required to effectively manage products and services.
ITIL practices	A set of organizational resources designed for performing work or accomplishing an objective.
ITIL guiding principles	Recommendations that can guide an organization in all circumstances, regardless of changes in its goals, strategies, types of work, or management structure.
Governance	The means by which an organization is directed and controlled.
Continual improvement	The practice of aligning an organization's practices and services with changing business needs through the ongoing identification and improvement of all elements involved in the effective management of products and services.

Diagram of the Four Dimensions of Service Management



Descriptions of the Four Dimensions of Service Management

***Four Dimensions of Service Management**: The four perspectives that are critical to the effective and efficient facilitation of value for customers and other stakeholders in the form of products and services.*

Dimension	Description (taken from ITIL 4 Glossary)
Organizations and People	Ensures that the way an organization is structured and managed, as well as its roles, responsibilities, and systems of authority and communication, is well defined and supports its overall strategy and operating model.
Information and technology	Includes the information and knowledge used to deliver services, and the information and technologies used to manage all aspects of the service value system.
Partners and suppliers	Encompasses the relationships an organization has with other organizations that are involved in the design, development, deployment, delivery, support, and/or continual improvement of services.
Value streams and processes	Defines the activities, workflows, controls, and procedures needed to achieve the agreed objectives.

Activity

Discussing ITIL Basics

Service Management

***Service management**: A set of specialized organizational capabilities for enabling value for customers in the form of services.*

- Successful, profitable, and scalable IT service management is the fundamental concern of ITIL.
- ITSM is the implementation and management of quality IT services to meet the needs of the business.
- Service management consists of practices, activities, governance, and improvement capabilities.
- The key point in definition of service management is the focus on **enabling** the creation of value, rather than delivering value.
- Effective service management enables:
  - Customers to use services and produce successful strategic, tactical, and operational outcomes.
  - Efficient use of resources, effective results delivery, and sustainability over time.

Products and Services

***Product**: A configuration of an organization's resources designed to offer value for a consumer.*

***Service**: A means of enabling value co-creation by facilitating outcomes that customers want to achieve, without the customer having to manage specific costs and risks.*

- Organizations own access to resources:
  - People
  - Information and Technology
  - Partners and Suppliers
  - Value Streams and Processes
- Products configure these resources in ways to create value for customers.
- Services enable customers to achieve desired outcomes and enable the co-creation of value.

Co-Creation of Value

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

- Value is fundamental to the concept of a service.
- Value is co-created by a service provider and a service consumer.
- Service providers should seek to build interactive relationships with their customers.

Organizations

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

- Organizations can be:
  - A single person
  - A group
  - An enterprise
- The size and range of authority can vary widely in scope.
- Relationships formed by organizations:
  - Include service provider and service consumer
  - Internal or external
  - Drive the context of the service

Service Providers

***Service provider**: A role performed by an organization in a service relationship to provide services to consumers.*

- Organizations providing services:
  - Know who its consumers are
  - Know who the other stakeholders are
- Customers can be internal or external to the organization
- Service providers can be standalone or part of a service alliance

Service Consumers

- In general, service consumers utilize services.
- One person can be a combination of the customer, user, and sponsor, depending on the nature of the service relationship.
- Conversely, multiple entities might be the customers, users, or sponsors.

Service Consumer Types

***Customer**: A person who defines the requirements for a service and takes responsibility for the outcomes of service consumption.*

***User:** A person who uses services.*

***Sponsor:** A person who authorizes the budget for service consumption. Can also be used to describe an organization or individual that provides financial or other support for an initiative.*

Stakeholders and Value Alignment

Stakeholder	Example Stakeholder Value
Service consumers	Benefits achieved, costs and risks optimized
Service provider	Funding from the consumer; business development; image improvement
Service provider employees	Financial and non-financial incentives, career and professional development, sense of purpose
Society and community	Employment, taxes, organizations' contribution to the social and community development
Charity organizations	Financial and non-financial contributions from other organizations
Shareholders	Financial benefits, such as dividends; sense of assurance and stability

Service Offerings

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

- Service offerings describe how one or more products or services will meet the needs of a target audience.
  - Goods
  - Access to resources
  - Service actions

Service Offering Components

Component	Description	Examples
Goods	• Supplied to the consumer. • Ownership is transferred to the consumer. • Consumer takes responsibility for future use.	• A mobile phone • A physical server
Access to resources	• Ownership is not transferred to the consumer. • Access is granted or licensed to the consumer under agreed terms and conditions. • The consumer can only access the resources during the agreed consumption period and according to other agreed service terms.	• Access to a mobile network • Access to network storage
Service actions	• Performed by the service provider to address a consumer's needs. • Performed according to agreement with the consumer.	• User support • Replacement of a piece of equipment

Service Relationship

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

- Organizations engage as service providers and service consumers to produce service relationships.
- The roles of service provider and service consumer are not mutually exclusive.

Service Provision

***Service provision**: Activities performed by an organization to provide services. Service provision may also include the supplying of goods.*

- Service provision includes:
  - Managing the provider's resources that are configured to deliver the service.
  - Providing users with access to resources.
  - Fulfilling the agreed service actions.
  - Performing service level management and continual improvement.
  - Supplying goods.

Service Consumption

***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.
  - The receiving (acquiring) of goods.
- Service consumers:
  - Have their own resources.
  - Use the provider's resources.
  - May acquire goods.
- Value is co-created when the provider's service is used by the customer's resources to facilitate outcomes they want to achieve.

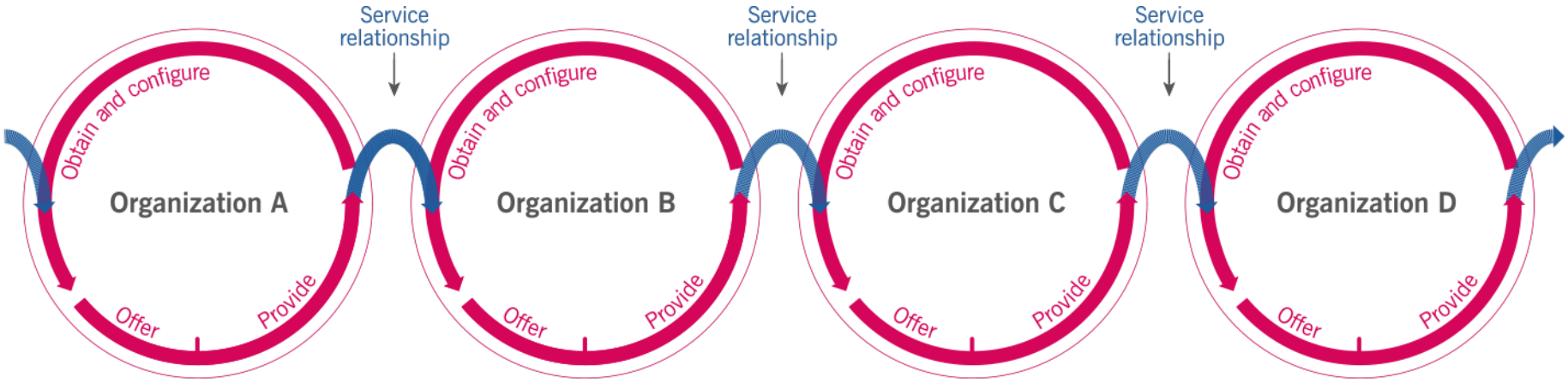
Service Relationship Management

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

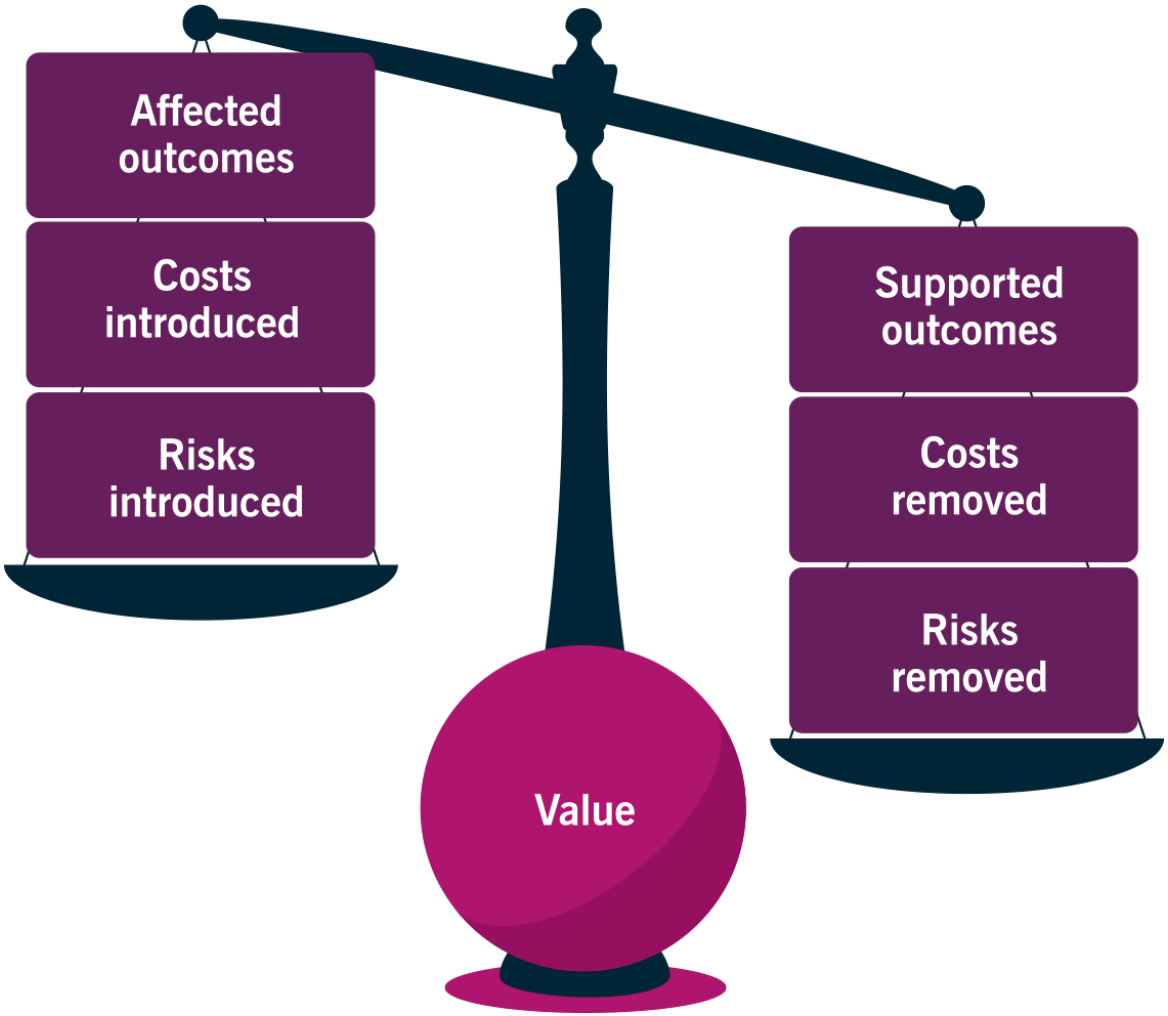
- Service provider provides:
  - Goods
  - Access to resources
  - Service actions
- Service consumer provides:
  - Customer resources
  - Business need for consumption

The Service Relationship Model

- A service provider's services create new customer resources:
  - A training service improves the skills of the consumer's employees
  - A broadband service allows the consumer's computers to communicate
  - A rental car service enables the consumer's staff to visit clients
- A service consumer can then take the new resources to offer services downstream as a service provider to ***their*** customers.



Value



Outputs and Outcomes

Output

***Output**: A tangible or intangible deliverable of an activity.*

- Produce specific deliverables
- Example: an accounts receivable system

Outcome

***Outcome**: A result for a stakeholder enabled by one or more outputs.*

- Produce the desired stakeholder result
- Example: the ability to track and manage customer payments

Service providers often focus on the outputs they produce, but the right business context is needed to produce the outcomes a customer desires.

Costs and Risks

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

Risk: *A possible event that could cause harm or loss, or make it more difficult to achieve objectives.*

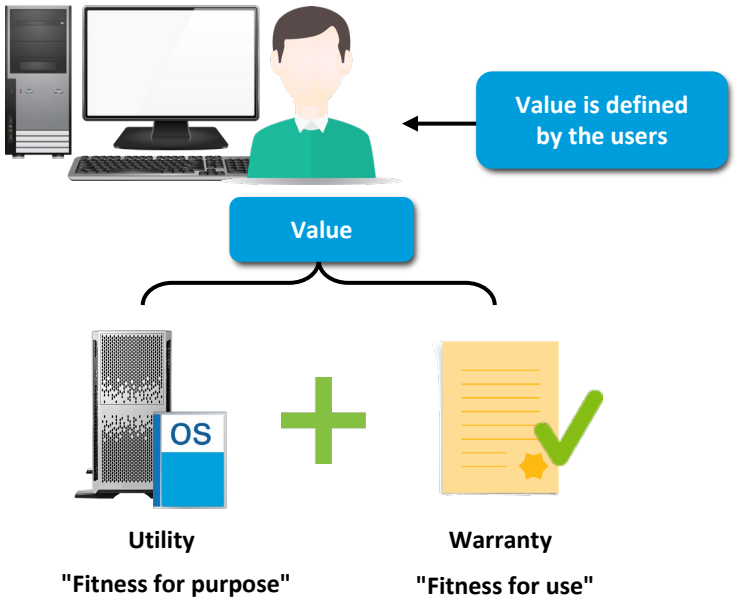
Risk can also be defined as uncertainty of outcome, and can be used in the context of measuring the probability of positive outcomes as well as negative outcomes.

- Two types of cost:
  - Imposed cost of the product or service.
  - Removed cost that the service provider bears.
- Two types of risk:
  - Imposed risk of consuming the service.
  - Removed risk that is transferred from consumer to service provider.
- Services can take ownership of some costs and risks and also impose other costs and risks.
- Organization must fully understand the costs and risks.

Utility and Warranty

Utility: *The functionality offered by a product or service to meet a particular need.*

Warranty: *Assurance that a product or service will meet agreed requirements.*



Activity

Discussing the Key Concepts of ITIL

Reflective Questions

1. To what extent or in what form has your organization adopted ITIL as a practice?

2. When it comes to the four dimensions of service management, does your organization belong to one specific dimension?

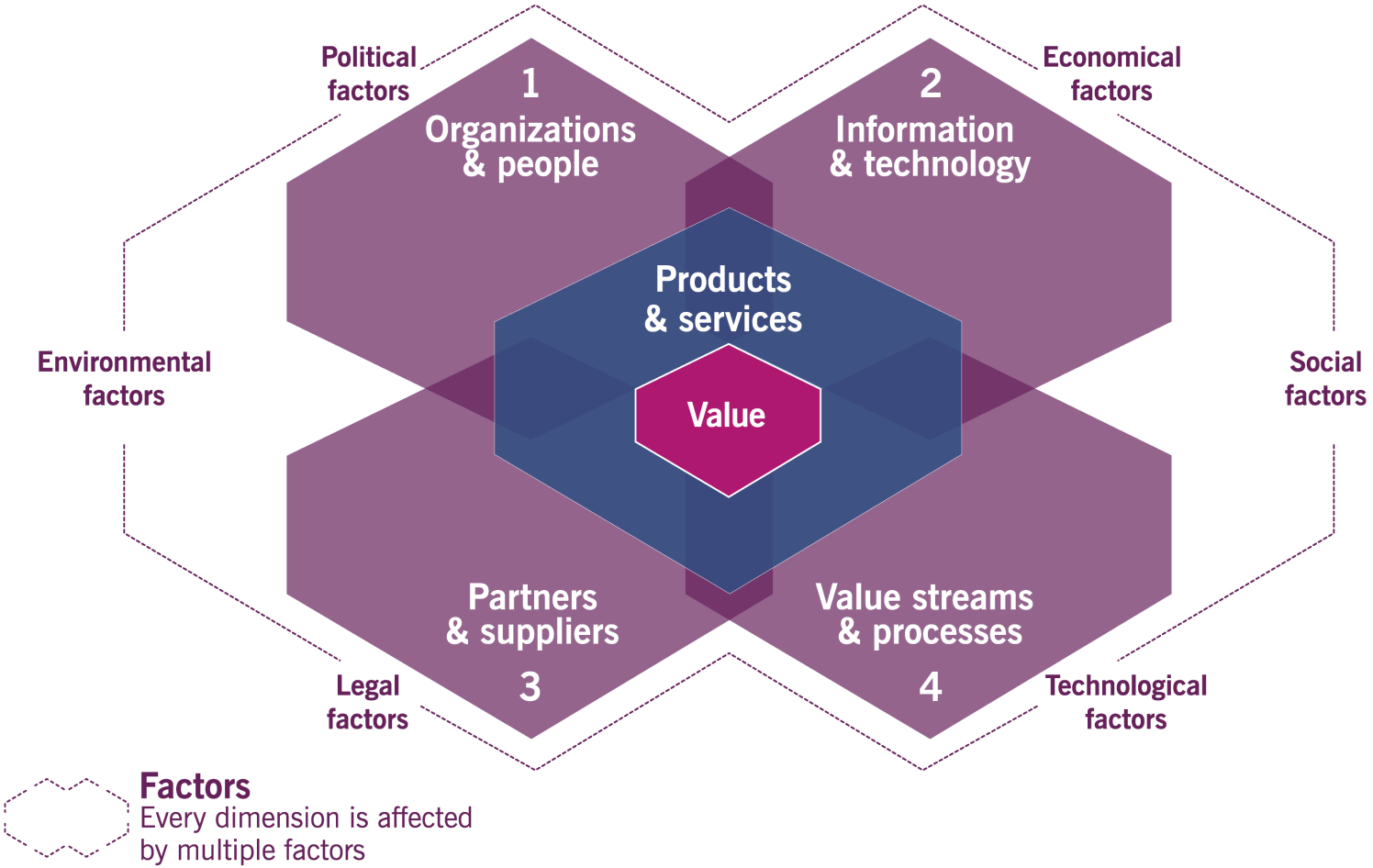
The ITIL® Framework

- The Four Dimensions of Service Management
- The ITIL Service Value System

Topic A

The Four Dimensions of Service Management

The Four Dimensions of Service Management



A Holistic Approach to Value Delivery

- People often approach service delivery focused on one aspect:
  - Process adoption
  - Tool implementation
  - Supplier identification
  - and others
- To deliver successful service, attention must be paid to all four dimensions.

Organizations

- The service management approach must consider:
  - Organizational structures
  - Workforce requirements
  - Roles and responsibilities
  - Culture, including communication styles
- When service management is adopted, organizations must take the organizational structure, the organization's culture, and the workforce requirements into account.
- People at the top levels of the organization dictate and direct attitudes, motivation, and shared values about best practices.
- Leaders should demonstrate and model supportive behaviors and attitudes to foster cooperation and collaboration.
- An organizational culture of trust and transparency leads to issues being raised and escalated, and facilitates corrective actions being taken.

People

- People are the key in all service relationships.
- The common objective is enabling value creation for all.
- Factors that influence service management approach:
  - Skills and competencies
  - Management and leadership styles
  - Communications and collaboration
  - Broad knowledge and specialized expertise
  - Each individual's understanding of their contribution to value creation
  - Break down organizational silos

Information and Technology

- Applies to service management **and** to the services being managed:
  - Information and knowledge needed
  - Technologies:
    - Workflow management systems
    - Knowledge bases
    - Inventory systems
    - Communication systems
    - Analytical tools
  - Practice inputs and outputs
- Artificial intelligence, machine learning, and other cognitive computing solutions
- Mobile platforms, cloud solutions, remote collaboration tools, automated testing, and deployment solutions
- For a particular IT service:
  - Information created and managed
  - Technology platforms (applications, databases, communications, integration)

Information Considerations

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

Technology Questions

- Is the technology compatible with the current architecture?
- Are there regulatory or other compliance issues?
- Is the technology viable in the foreseeable future?
- Does the technology align with the strategy of the service provider, or its service consumers?
- Do the right skills across staff and suppliers exist to support and maintain the technology?
- Is there sufficient automation capabilities to ensure it can be efficiently developed, deployed, and operated?
- Are there additional capabilities that might be leveraged for other products or services?
- Are there new risks or constraints to the organization (e.g., vendor lock-in)?

Partners and Suppliers

- This dimension encompasses an organization's relationships with other organizations:
  - The design, development, deployment, delivery, support and/or continual improvement of services.
  - Contracts and other agreements between the organization and its partners or suppliers.
- Organizations make strategic choices about how widely or narrowly they use partners and suppliers.

- Partners share the goals and risks involved in service provision, and are involved in many facets of the service provision.
- Suppliers are responsible for providing goals and services that are used by an organization.
- All partners are suppliers, but not all suppliers are partners.

Strategic Factors

- Strategic Focus
- Corporate Culture
- Resource Scarcity
- Cost Concerns
- Subject Matter Expertise
- External Constraints
- Demand Patterns

- Proliferation of “As a Service” infrastructure and platforms

Value Streams

***Value stream**: A step in the value chain that an organization takes in the creation of value.*

- Defines activities, workflows, controls, and procedures needed to achieve agreed objectives:
  - For products and services
  - For the entire Service Value System (SVS)
- Work in an integrated and coordinated way to deliver value to customers.
- Map value streams to:
  - Identify waste
  - Optimize
  - Continually improve

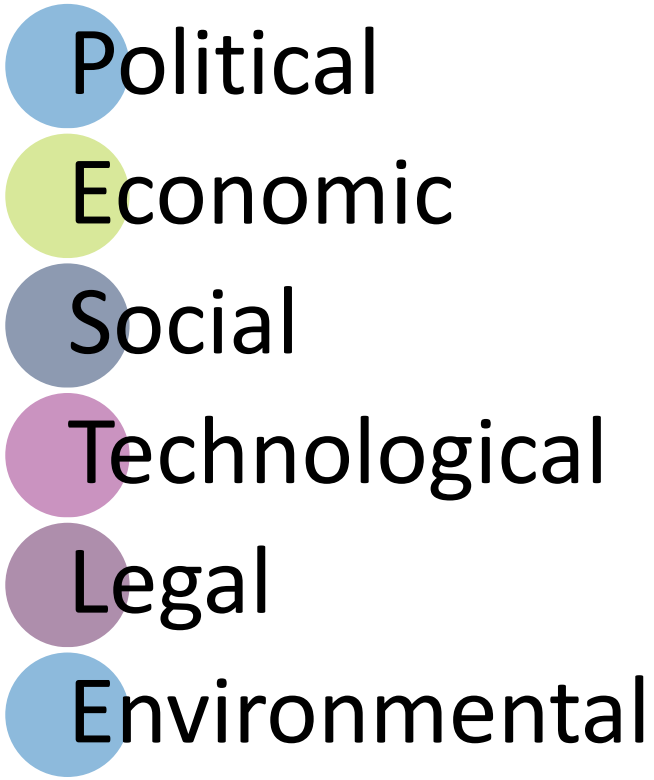
Processes

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

- Describe activities to accomplish an objective.
- Detailed in:
  - Procedures – Who is involved
  - Work Instructions – How is the work carried out
- Considerations when creating a service:
  - What is the generic delivery model for the service, and how does the service work?
  - What are the value streams involved in delivering the agreed outputs of the service?
  - Who, or what, performs the required service actions?

External Factors

- Influence and impact all four dimensions of service management.



Activity

Discussing the Four Dimensions of Service Management

Topic B

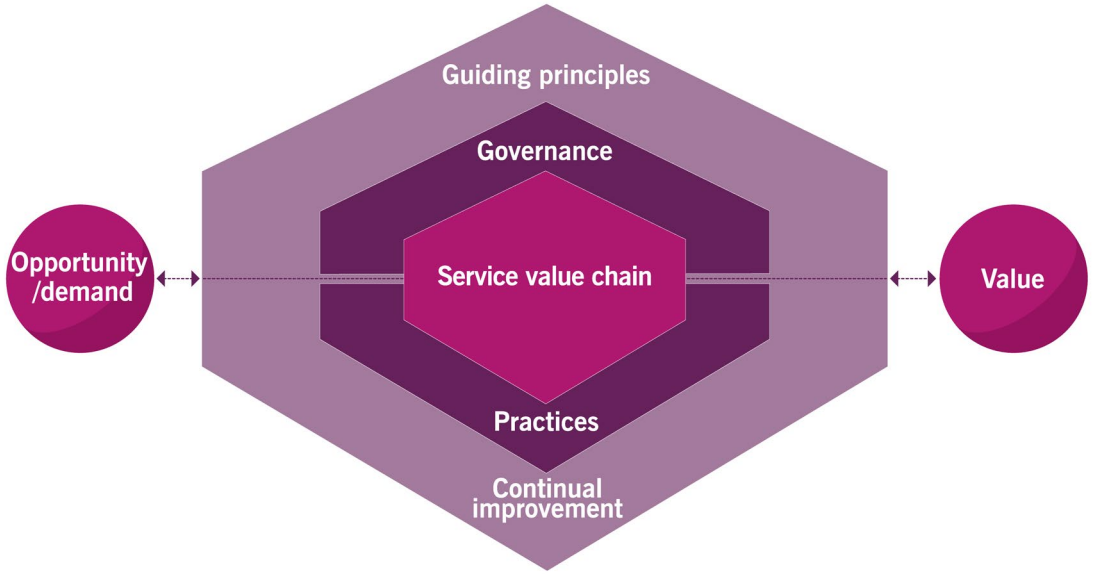
The ITIL Service Value System

Opportunity and Demand

***Opportunity**: Options or possibilities to add value for stakeholders or otherwise improve the organization.*

***Demand**: The need or desire for products and services from internal and external customers.*

- There may not be demand for these opportunities yet.
- Prioritize new or changed services with opportunities for improvement.
- Opportunities and Demand trigger the SVS.



What is a Guiding Principle?

***Guiding principle**: Recommendations that can guide an organization in all circumstances, regardless of changes in its goals, strategies, type of work, or management structure.*

7 GUIDING PRINCIPLES

- *Focus on Value*
- *Start Where You Are*
- *Progress Iteratively with Feedback*
- *Collaborate and Promote Visibility*
- *Think and Work Holistically*
- *Keep It Simple and Practical*
- *Optimize and Automate*

The Seven Guiding Principles

Guiding Principle	Description
Focus on Value	Everything that the organization does needs to map, directly or indirectly, to value for the stakeholders.
Start Where You Are	Do not start from scratch and build something new without considering what is already available to be leveraged.
Progress Iteratively with Feedback	Do not attempt to do everything at once.
Collaborate and Promote Visibility	Working together across boundaries produces results that have greater buy-in, more relevance to objectives, and better likelihood of long-term success.
Think and Work Holistically	No service, or element used to provide a service, stands alone.
Keep It Simple and Practical	If a process, service, action or metric provides no value, or produces no useful outcome, eliminate it.
Optimize and Automate	Human intervention should only happen where it really contributes value.

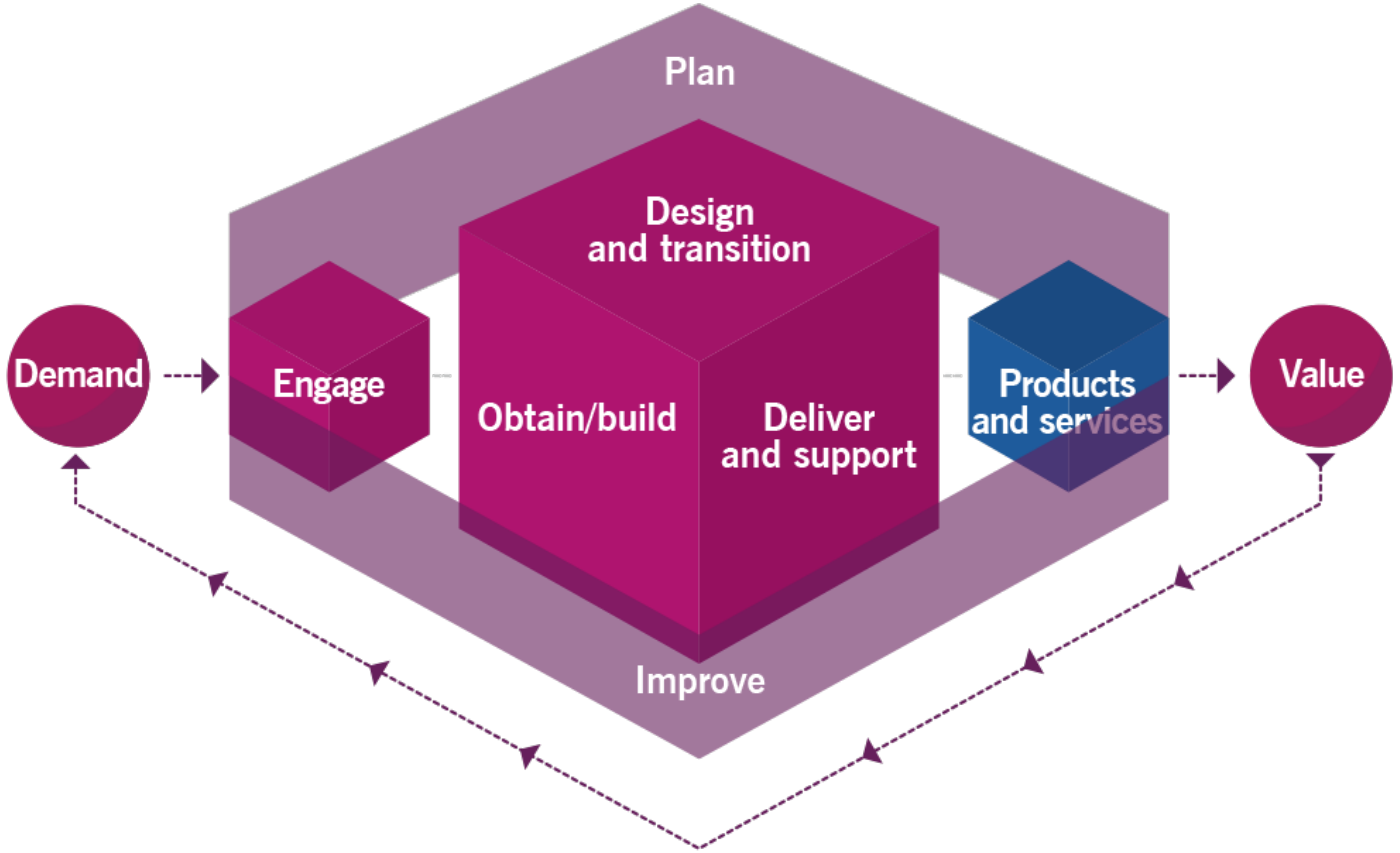
Governing Bodies

- Governance can be applied to:
  - An organization.
  - One or more units or products.
- Guiding principles and continual improvement apply to the entire SVS, including governance.
- Governing body can:
  - Adopt the ITIL guiding principles and adapt them, or
  - Define its own specific set of principles and communicate them across the organization.
- Visibility of:
  - Outcomes of continual improvement activities.
  - Measurement of value for the organization and its stakeholders.

Governance Activities

- The service value chain and the 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 Service Value Chain



Service Value Chain Activities

Activity	Description
Plan	Relevant planning activities at all levels: strategic, architectural, program/project, and so on.
Improve	Execution of improvement activities and provision of improvement information.
Engage	Interactions with third parties, including users, customers, suppliers, and other stakeholders.
Design and Transition	Creation of new or changed solution designs; management and implementation of change.
Obtain/Build	Acquisition or building of components, whether acquired from a third party or built in-house.
Deliver and Support	Hosting and delivery of solutions; support for user needs related to the services.

Definition of ITIL Practices

***Practice**: A set of organizational resources designed for performing work or accomplishing an objective.*

- General management practices have been adopted/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.

General Management Practices

- Architecture Management
- ***Continual Improvement****
- ***Information Security Management****
- Knowledge Management
- Measurement and Reporting
- Organizational Change Management
- Portfolio Management
- Project Management
- ***Relationship Management****
- Risk Management
- Service Financial Management
- Strategy Management
- ***Supplier Management****
- Workforce and Talent Management

**In scope for ITIL Foundation exam*

Service Management Practices

- Availability Management
- Business Analysis
- Capacity and Performance Management
- ***Change Enablement****
- ***Incident Management****
- ***IT Asset Management****
- ***Monitoring and Event Management****
- ***Problem Management****
- ***Release Management****
- Service Catalogue Management
- ***Service Configuration Management****
- Service Continuity Management
- Service Design
- ***Service Desk****
- ***Service Level Management****
- ***Service Request Management****
- Service Validation and Testing

****In scope for ITIL Foundation exam***

Technical Management Practices

- ***Deployment Management****
- Infrastructure and Platform Management
- Software Development and Management

****In scope for ITIL Foundation exam*

Continual Improvement

- The Continual Improvement model applies to:
  - The SVS in its entirety
  - All of the organization's products, services, service components, and relationships
- The ITIL SVS includes:
  - The ITIL Continual Improvement model, which provides organizations with a structured approach to implementing improvements.
  - The Improve activity of the service value chain, which embeds continual improvement into the value chain.
  - The Continual Improvement practice, which supports organizations in their day-to-day improvement efforts.

Activity

Discussing the Service Value System

Reflective Questions

1. What is your conception of the relationship between the Four Dimensions and the service value chain?

2. Are there any practices that are familiar to you from your professional experience or are similar to ones you already have in place in your organization?

The ITIL® Guiding Principles

- Focus on Value
- Start Where You Are
- Progress Iteratively with Feedback
- Collaborate and Promote Visibility
- Think and Work Holistically
- Keep It Simple and Practical
- Optimize and Automate

Topic A

Focus on Value

Focus on Value

- Who is the customer? What do they value?
- Who are the other stakeholders? What do they value?
- What is it about the service that creates value?
  - Why does the consumer use the services?
  - What do the services help them to do?
  - How do the services help them meet their goals?
  - What is the role of cost/financial consequences for the service consumer?
  - What is the role of risks for the service consumer?

Customer Experience (CX)

__CX__: The sum of functional and emotional interactions with a service and service provider as perceived by a customer.

__UX__: The sum of functional and emotional interactions with a service and service provider as perceived by a user.

- May influence how the consumer feels about the service provider and the products.
  - Partly objective
  - Partly subjective

Apply the 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.

Activity

Discussing the Focus on Value Principle

Topic B

Start Where You Are

Start Where You Are

- Often there are existing practices and capabilities to be leveraged.
- Measure or observe directly current practices.
  - Reports often are misleading.
  - Assumptions can lead to poor decisions.
- Ask for clarifications if activities are unclear.
- Metrics and measures support direct observation.
- Measuring things often affects people's behavior.
  - People will do what you measure, so be careful!
  - According to Goodhart's law, "When a measure becomes a target, it ceases to be a good measure."

Apply the Principle

- Look at what exists as objectively as possible, using the customer, or the desired outcome, as the starting point.
- When examples of successful practices or services are found in the current state, determine if and how these can be replicated or expanded upon to achieve the desired state.
- Apply your risk management skills.
- Recognize that sometimes nothing from the current state can be reused.

Activity

Discussing the Start Where You Are Principle

Topic C

Progress Iteratively with Feedback

Progress Iteratively with Feedback

- Resist the temptation to do everything at once.
- Break work into small, manageable chunks.
- Major initiatives can be decomposed into smaller initiatives.
  - Use feedback to drive further improvements.
  - Assess to maintain focus on value.
- Improvements can be sequential or simultaneous.

Feedback

***Feedback loop**: A technique whereby the outputs of one part of a system are used as inputs to the same part of the system.*

- Business context changes in real time emphasize the necessity for useful feedback.
- Feedback enables us to assess the value of an iteration, and whether to continue or change direction.
- Feedback loops facilitate:
  - An understanding of end user and customer perception of the value created.
  - An improvement in efficiency and effectiveness of value chain activities.
  - Increased effectiveness of service governance as well as management controls.
  - Ensuring an interface between the organization and its partner and supplier network.
  - Encouraging demand for products and services.

Time-Boxing

- Time is ***the*** limited constraint.
- Time-boxing activities improve focus and drive results.
- Benefits include:
  - Greater flexibility.
  - Faster responses to customer and business needs.
  - The ability to discover and respond to failure earlier.
  - Overall improvement in quality.

Apply the Principle

Minimum Viable Product (MVP): *A product with just enough features to satisfy early customers, and to provide feedback for future product development.*

- Comprehend the whole, but do something.
- The ecosystem is constantly changing, so feedback is essential.
- Fast does not mean incomplete.
- Strive for an MVP.

Activity

Discussing the Progress Iteratively with Feedback Principle

Topic D

Collaborate and Promote Visibility

Collaborate and Promote Visibility

- Right people + right roles + right information = better outcomes.
- Silo behavior can happen for many reasons, but impedes collaboration and communication.
- Working together requires information, understanding, and trust.
  - Make work visible
  - Avoid hidden agendas
  - Share information
- When improvements lack communications, people make poor guesses.

Stakeholder Identification

- Identifying your stakeholders is fundamental to the Collaborate and Promote Visibility principle.
- Customer collaboration leads to better outcomes.
- Developers working with operations to:
  - Ensure delivery efficiency and effectiveness
  - Investigate defects
  - Identify workarounds or permanent fixes
- Suppliers collaborate to find innovative solutions to problems.
- Relationship managers work to understand service consumer needs.
- Customers collaborate to better understand business issues.
- Suppliers collaborate on shared process and automation opportunities.

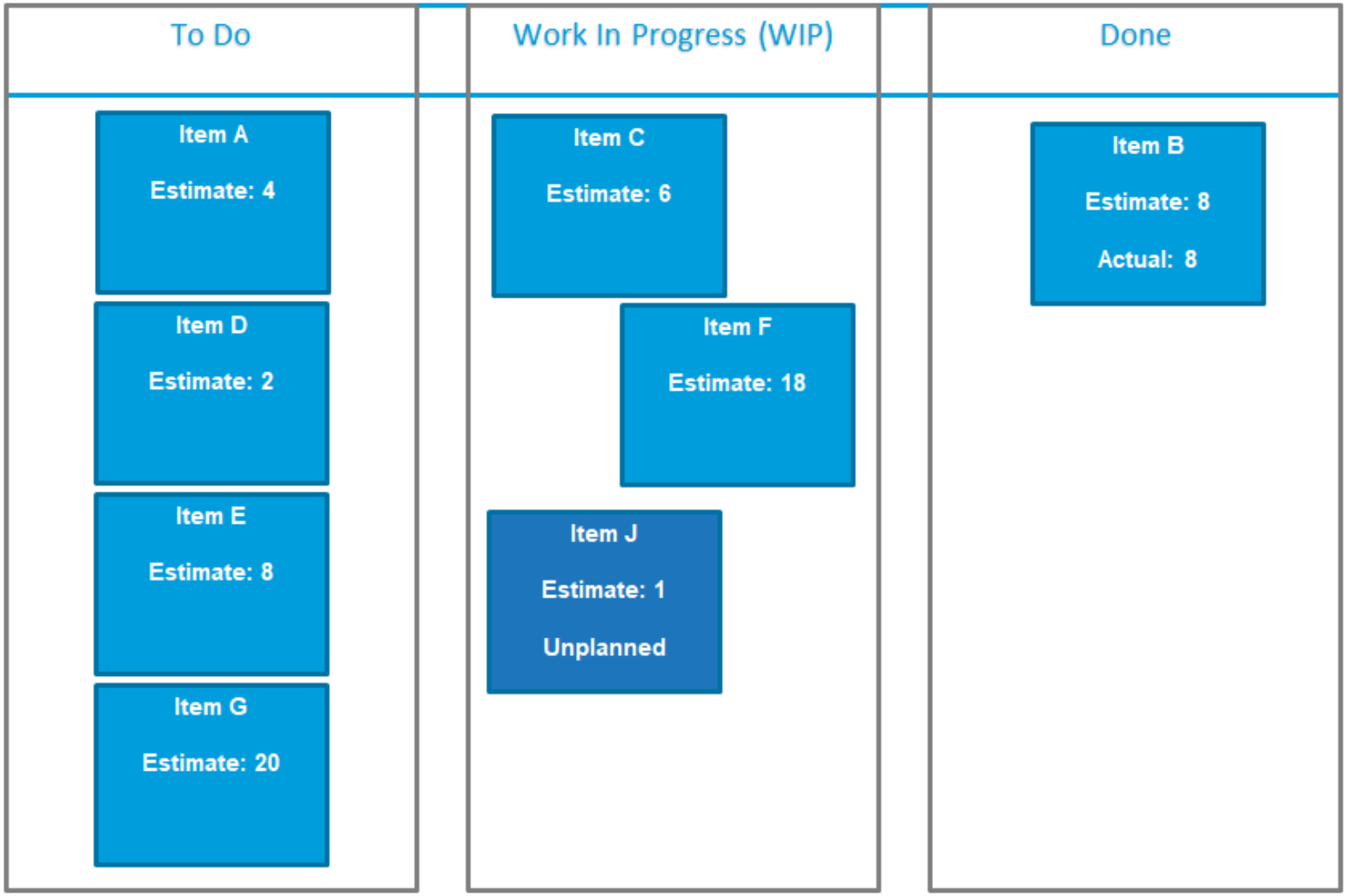
Communications

- Good communication provides clarity, direction, and motivation around and in service management.
- Improvement comes from feedback from different perspectives.
  - External customers
  - Internal customers
  - Other stakeholders
- Different levels of engagement are appropriate.
  - **Operational**—daily communications with users about operational needs and issues.
  - **Tactical**—regular communications with the customer about service, service performance, and potential service improvement.
  - **Strategic**—communications that assess strategic needs at the organizational level.

Make Work Visible

- Important to prioritize improvements to demonstrate commitment.
- Easier to do this when value and work is more visible.
  - Understand the flow of work in progress
  - Identify bottlenecks, as well as excess capacity
  - Uncover waste
- Address the need to provide the right information to all stakeholders.

A Sample Kanban Board



Apply the Principle

- Collaboration does not mean consensus.
  - Engage stakeholders, but then **act**!
- Communicate in a way the audience can hear.
  - Right stakeholder, right message, right medium.
- Decisions can only be made on visible data.
  - Decisions driven by quality and availability of data.
  - What data is needed?
  - How much does it cost to get the data?
  - Balance cost of data against potential costs of not having it.

Activity

Discussing the Collaborate and Promote Visibility Principle

Topic E

Think and Work Holistically

Think and Work Holistically

***Systems thinking**: A holistic approach to analysis that focuses on the way that a system's constituent parts work, interrelate, and interact over time, and within the context of other systems.*

- Everything in IT service management is interrelated and interdependent.
- Have to consider how everything works together to accomplish the objective.
- Using systems thinking:
  - Consider the whole, not just the subset parts.
  - Consider all four dimensions.
  - Improve the whole!
- Consider how value is created from demand:
  - Who are the Organizations and People?
  - Who are the Suppliers and Partners?
  - What are the Processes and Value Streams?
  - What are the Information and Technologies?

Apply the Principle

- Recognize the complexity of the systems.
- Collaboration is key.
- Look for patterns in the needs of and interactions between system elements.
- Automation can facilitate working holistically.

Activity

Discussing the Think and Work Holistically Principle

Topic F

Keep It Simple and Practical

Keep It Simple and Practical

- Assess practices for value:
  - Always use the minimum number of steps needed to accomplish an objective.
  - If a process, service, action, or metric provides no value or produces no useful outcome, then eliminate it.
- If ignored, the results might be overly complex work methods.
- Design rules to handle exceptions generally.

Manage Conflicting Objectives

- Often different stakeholders have competing objectives.
  - One may want more data
  - One may want much less
- Focus on Value!
  - Consider what will most aid the decision-making process.
  - Simplify and streamline the process.
  - Then, automate where possible.

Apply the Principle

- Ensure value.
- Simplicity is the ultimate sophistication.
- Do fewer things, but do them better.
- Respect the time of the people involved.
- Easier to understand, more likely to adopt.
- Simplicity is the best route to achieving quick wins.

Activity

Discussing the Keep It Simple and Practical Principle

Topic G

Optimize and Automate

Optimize and Automate

- Maximize the value of technical and human resources.
  - With automation, technology takes on the frequent, repetitive tasks.
  - Human resources are liberated for higher-value work.
- Systems should be optimized before they are automated.
- Consider:
  - Financial limitations
  - Compliance requirements
  - Time constraints
  - Resource availability

Optimization Steps

Step	Description
Optimization Vision	Create and agree upon overall vision and align with objectives of the organization.
Current State	Assess the current state of the service to determine steps.
Desired Future State	Agree on what the future state and priorities of the organization should be, focusing on: • Simplification and value • Standardization of practices and services
Stakeholder Engagement	Establish the appropriate level of stakeholder engagement and commitment.
Execution	Execute the improvements in an iterative way.
Monitoring Feedback	Continually monitor the impact of optimization to inform future opportunities for improvement.

Automation

- Typically involves technology performing activities with little or no human intervention.
- Can also be the creation of predefined rules so human responses are “automated.”
- Advantages of automation:
  - Saving costs.
  - Reducing human error.
  - Improving the employee experience.

Apply the Principle

- Simplify and optimize before automating.
- Define your metrics.
  - Outcome-based
  - Focused on value
- Use the other guiding principles when applying this one, specifically:
  - Progress iteratively with feedback
  - Keep it simple and practical
  - Focus on value
  - Start where you are

Activity

Discussing the Optimize and Automate Principle

Interaction Between the Principles

- The guiding principles naturally interact with one another.
- When you Progress Iteratively with Feedback:
  - Think and Work Holistically to ensure that each iteration delivers real results.
  - Feedback is key to collaboration.
- Focusing on what will truly be valuable to the customer makes it easier to keep things simple and practical.
- Don’t use just one or two of the principles; consider:
  - The relevance of each.
  - How they are applied together.
- Not all principles will be critical in every situation.
- Review each occasion to determine relevance.

Activity

Discussing the Interaction Between the Principles

Reflective Questions

1. What is the value of having guiding principles? How do they help in prioritizing the things that are the most important?

2. Pick one of the guiding principles. What would it mean if an organization followed this principle, and what would it mean if it did not? Do you feel your own organization follows this principle today?

The ITIL® Service Value System

- Governance
- The Service Value Chain
- Continual Improvement

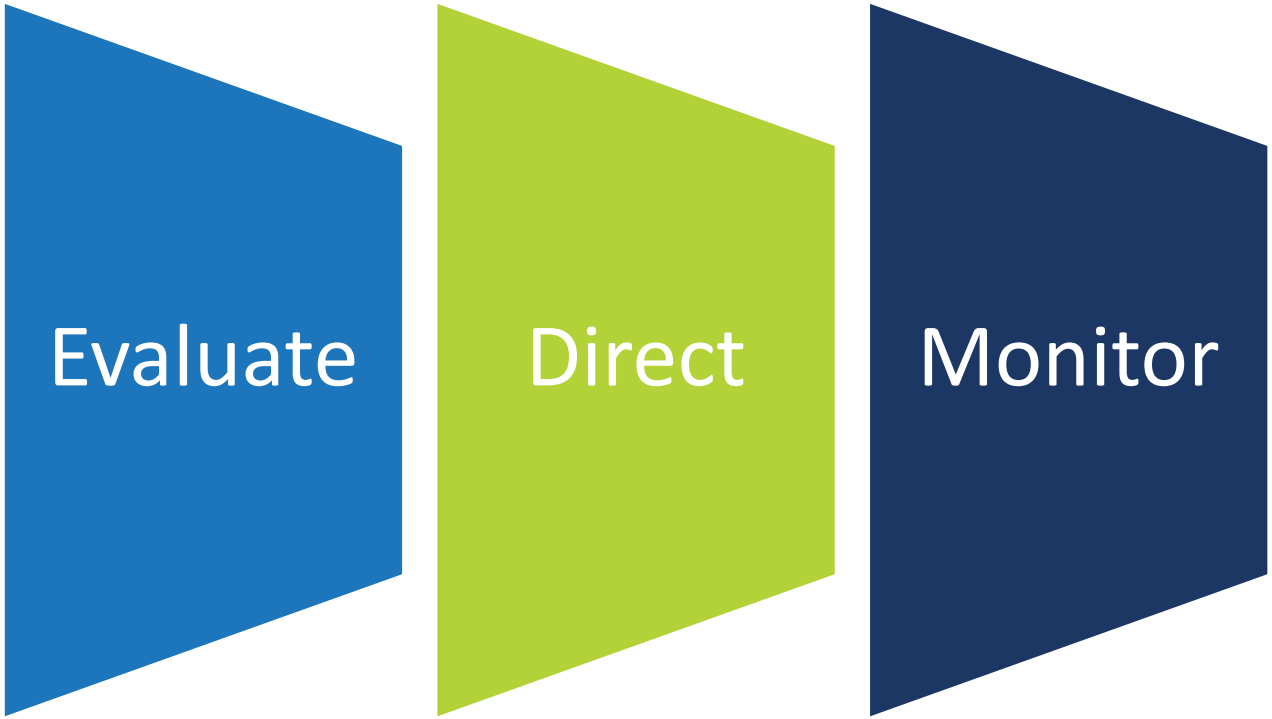
Topic A

Governance

Governing Bodies

- All organizations are directed by a governing body:
  - A person or group
  - Accountable at the highest level
    - Organizational performance
    - Compliance of the organization
- All sizes and types of organizations perform governance activities:
  - Board of directors
  - Executive managers when performing governance activities
  - Compliance to policies and external regulations

Governance Activities



The Evaluate Activity

- Governing body evaluates the organization's:
  - Strategy
  - Portfolios
  - Relationships with other parties
- Reviewed on a regular basis as stakeholders needs and external circumstances evolve.

The Direct Activity

- Defines organizational strategies.
- Sets the direction and prioritization.
  - Organizational activity
  - Future investment
- Policies establish the boundaries for behavior across the organization and with suppliers, partners, and other stakeholders
  - What is permitted
  - What is not permitted
- Organizations are then responsible to:
  - Execute the strategy
  - Comply with the policies

The Monitor Activity

- Monitor organizational performance.
  - Practices, products, and services to execute the strategy
  - Compliance with policies
- Use monitoring data as feedback to subsequent evaluation and direction.

The Role of Governance in the Service Value System

- Begins at the top, but may have parts delegated (e.g., IT governance).
- Fundamental to the SVS, and subject to continual improvement.
- Uses ITIL guiding principles or tailors them as needed to meet organization needs.
- Needs to have visibility into improvement activities and value delivery.

Guidelines for Establishing Governance in the Service Value System

- Service value chain and the practices must work in line with the direction given by the governing body.
- Governing body of the organization, either directly or through delegation of authority, maintains oversight of the SVS.
- Governing body and management at all levels maintain alignment through a clear set of shared principles and objectives.
- Governance and management at all levels are continually improved to meet expectations of the stakeholders.

Activity

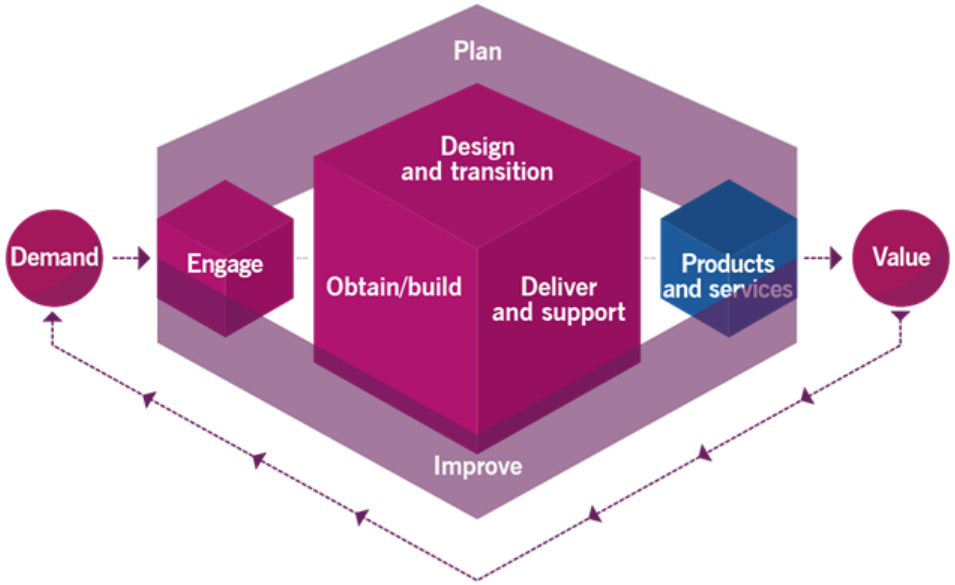
Discussing Governance in the Service Value System

Topic B

The Service Value Chain

The Service Value Chain

- Value streams describe activities an organization takes in the creation of value:
  - Convert inputs into outputs
  - Activities may trigger other activities
- Value chain activities use different combinations of ITIL practices:
  - Internal or third party resources
  - Processes
  - Skills and competencies
- Activities:
  - Plan
  - Improve
  - Engage
  - Design and Transition
  - Obtain/Build
  - Deliver and Support



Inputs and Outputs

- Inputs are received from other components of the SVC.
- Outputs are produced and used elsewhere in the SVC.
- The Input / Output relationships:
  - Are interconnected in a complex and dense manner.
  - Support the interactions among all activities in the SVC.
- The Input / Output relationships are *not*:
  - Linear
  - One-to-one

The Plan Activity

- Purpose is to ensure a shared understanding of:
  - Vision
  - Current status
  - Improvement direction
- Fundamental part of planning is prioritizing different alternatives and making decisions.
- The vision provides the aspirational goal for the future; the mission is the overall purpose and intentions of an organization.
- During this activity, you create strategic plans, project plans, and service plans.
- Must consider all four dimensions of service management to ensure a holistic approach.
- All other SVC activities will use and apply plans from this activity.

The Improve Activity

- Purpose is to ensure continual improvement of:
  - Products and services
  - Practices
- Includes all value chain activities and all four dimensions of service management.
- Requires performance information from all aspects of the SVC.
- In turn, provides improvement plans and improvement status information to all other SVC activities.

The Engage Activity

- Purpose is to provide:
  - A good understanding of stakeholder needs.
  - A means to facilitate transparency.
  - Continual engagement and good relationships with all stakeholders.
- Engage with different stakeholders using different practices. For example:
  - Operational day-to-day collaboration with users in Service Desk practice.
  - Tactical engagement with customers through Service Level Management practice.
  - Strategic engagement through Relationship Management.

The Design and Transition Activity

- Purpose is to ensure that products and services meet stakeholder expectations for:
  - Quality
  - Costs
  - Time-to-market
- As customer needs change, necessary activities are adjusted accordingly.
- “Design” activity requires:
  - The plan, the architecture information, customer requirements, and other Information from Engage.
  - Component information from Obtain/Build.
- “Transition” requires knowledge transfer of the improved product or service to other SVC activities.

The Obtain/Build Activity

- Purpose is to ensure that service components are:
  - Available when and where they are needed
  - Meet agreed specifications
- A large part of this activity is determining whether to obtain or build.
- To assist in decision making, consider if capacity to build is readily available and strategic to organization's competitiveness.
- If third part has economies of scale that make it more cost-effective to buy, then buy.
- Whenever components need to be built or acquired, they are acquired through the Obtain/Build activity.

The Deliver and Support Activity

- Purpose is to ensure that services are delivered and supported according to:
  - Agreed specifications
  - Stakeholders' expectations
- In this activity, you create data about incidents, service requests, events, and other performance data that is used to identify potential service improvements.
- The Improve, Engage, and Plan activities extensively use this data.

Activity

Discussing the Service Value Chain

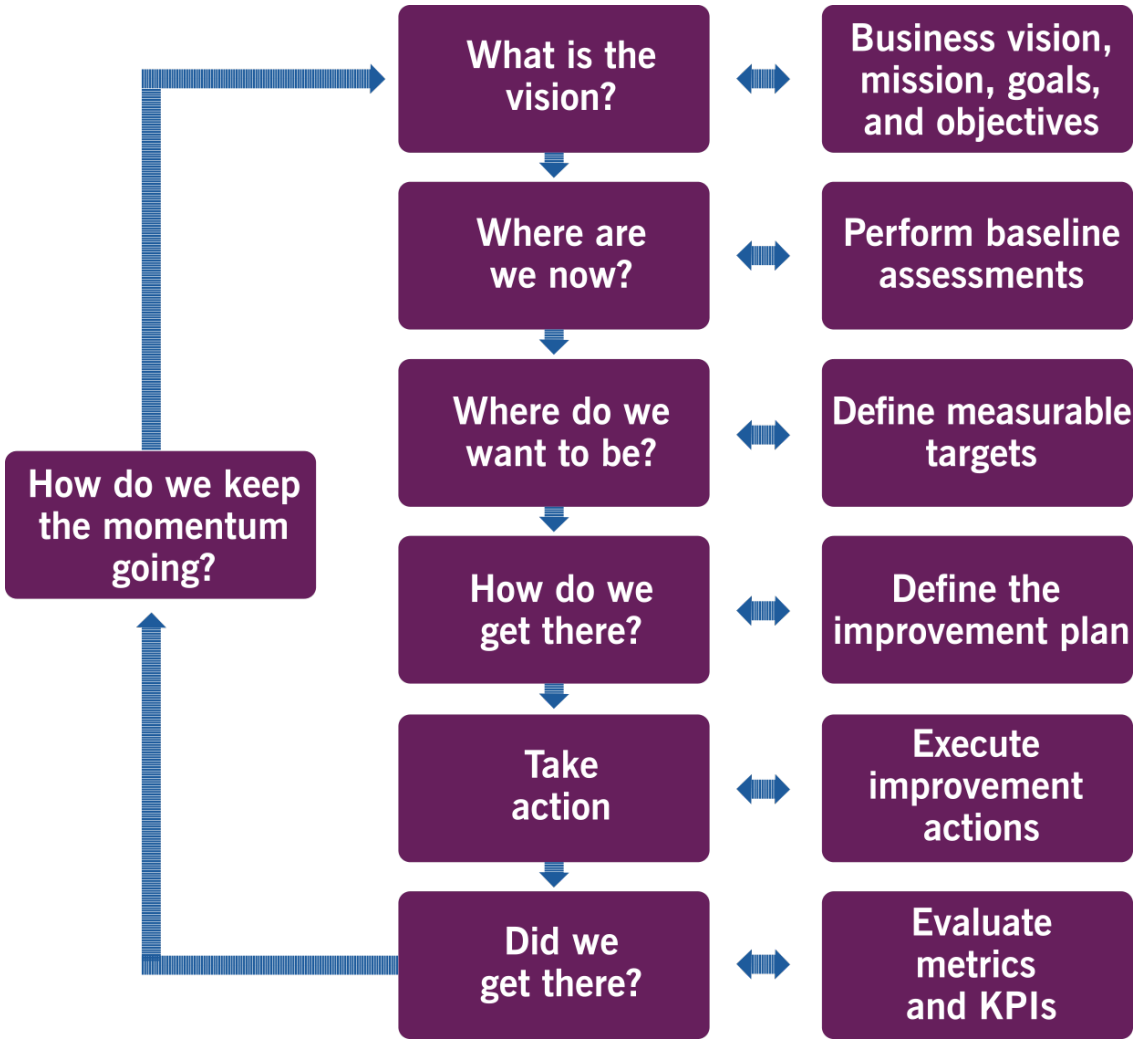
Topic C

Continual Improvement

Relationships of Continual Improvement Model, Value Chain, and Practices

- Continual improvement takes place in:
  - All areas of the organization
  - All levels, from strategic to operational
- Each person who contributes to the provision of a service should keep continual improvement in mind, and should always be looking for opportunities to improve.
- The Continual Improvement model applies to:
  - SVS
  - Products and services
  - Service components
  - Relationships
- ITIL SVS includes:
  - ITIL Continual Improvement model – Structured approach to implementing improvements.
  - Improve service value chain activity – Embeds continual improvement into the value chain.
  - The Continual Improvement practice – Day-to-day improvement efforts.

The Continual Improvement Model



What Is the Vision?

- Organization's vision and objectives need to be translated for the specific business unit, department, team, and/or individual.
- Context, objectives, and boundaries for any improvement initiative are understood.
- High-level vision for the planned improvement needs to be created.
- Ensure that:
  - High-level direction has been understood
  - Planned improvement initiative is described and understood in that context
  - Stakeholders and their roles have been understood
  - Expected value to be realized is understood and agreed
  - Role of the person or team responsible for carrying out the improvement is clear in relation to achieving the organization's vision

Where Are We Now?

- Current state assessment:
  - Existing services
  - Perception of value received
  - People's competencies and skills
  - Processes and procedures
  - Technical capabilities
- Culture:
  - What level of organizational change management is required?
- Objective measures should be used whenever possible
- Baseline enables later comparison

Where Do We Want to Be?

- Initial vision may be aspirational.
- Identify the next step of the improvement journey.
  1. Perform a Gap Analysis.
  2. Identify and prioritize improvement opportunities.
  3. Set objectives.
  4. Establish critical success factors (CSFs) and key performance indicators (KPIs).
- Use SMART criteria.

How Do We Get There?

- Plan the improvement.
  - Can be simple or complex
  - Do in iterations with feedback
  - Check progress and re-evaluate as needed
- Experiment with different alternatives, when appropriate and needed.

Take Action

- Execute the improvement.
  - Use a Waterfall or an Agile approach.
  - Remain open to feedback and course correction as needed.
- Maintain a continual focus on:
  - Measuring progress towards the vision.
  - Managing risks.
  - Ensuring visibility and overall awareness.

Did We Get There?

- Organizations often assume expected has been achieved.
- Success must be validated.
  - Have the original objectives been achieved?
  - Are those objectives still relevant?
- If the desired result has not been achieved, additional actions to complete the work are selected and undertaken—commonly resulting in a new iteration.

How Do We Keep the Momentum Going?

- If the improvement has delivered the expected value:
  - Market the success
  - Reinforce any new methods introduced
- If the expected results of the improvement were not achieved:
  - Inform stakeholders of the reasons for the failure
  - Document and communicate lessons learned
  - Record what can be done differently in the next iteration
- Transparency is important for future efforts

How Continual Improvement Maps to Guiding Principles

	Focus on Value	Start Where You Are	Progress Iteratively with Feedback	Collaborate and Promote Visibility	Think and Work Holistically	Keep it Simple and Practical	Optimize and Automate
What is the vision?	**X**	X	X	**X**	**X**	X	X
Where are we now?	X	**X**	X	**X**	X	X	X
Where do we want to be?	X	X	**X**	X	**X**	**X**	**X**
How do we get there?	X	X	**X**	**X**	**X**	**X**	X
Take action	**X**	X	**X**	**X**	X	X	X
Did we get there?	**X**	X	X	**X**	**X**	X	X
How do we keep the momentum going?	**X**	X	X	**X**	**X**	X	**X**

Theory of Constraints

- Theory of Constraints is used to focus on the work that is the highest priority.
  - The weakest link in the value chain determines the flow and throughput of the system.
  - The weakest link must be elevated as much as possible.
    - Sometimes this will reveal a new weakest link!
  - All the other steps in the value chain must be organized around it.
- As improvements are executed, a new weakest link forms.
- Weakest link can be identified using LEAN practices like Value Stream Mapping.

Activity

Discussing the Continual Improvement Model

Reflective Questions

1. Identify a set of common activities that you perform and consider how it applies across the different activities of the service value chain. How might each of the four dimensions be engaged?

2. Which step of the Continual Improvement model does your organization do best? Which step causes the most trouble?

Key ITIL® Practices

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

Topic A

Continual Improvement

ITIL Practices Redefined

***ITIL Practice**: A set of organizational resources designed for performing work or accomplishing an objective.*

7 Key Examinable Practices

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

Other Examinable Practices

- Relationship Management
- Information Security Management
- Supplier Management
- Service Configuration Management
- IT Asset Management
- Monitoring and Event Management
- Release Management
- Deployment Management

Purpose of Continual Improvement

- Align the organization's practices and services with changing business needs
- Identification and improvement of:
  - Services
  - Service components
  - Practices
  - Any element involved in the efficient and effective management of products and services
- Develop improvement-related methods and techniques
- Continual improvement culture across the organization
- Commitment to and practice of continual improvement must be embedded
- If not, daily operational concerns and major project work will eclipse continual improvement efforts

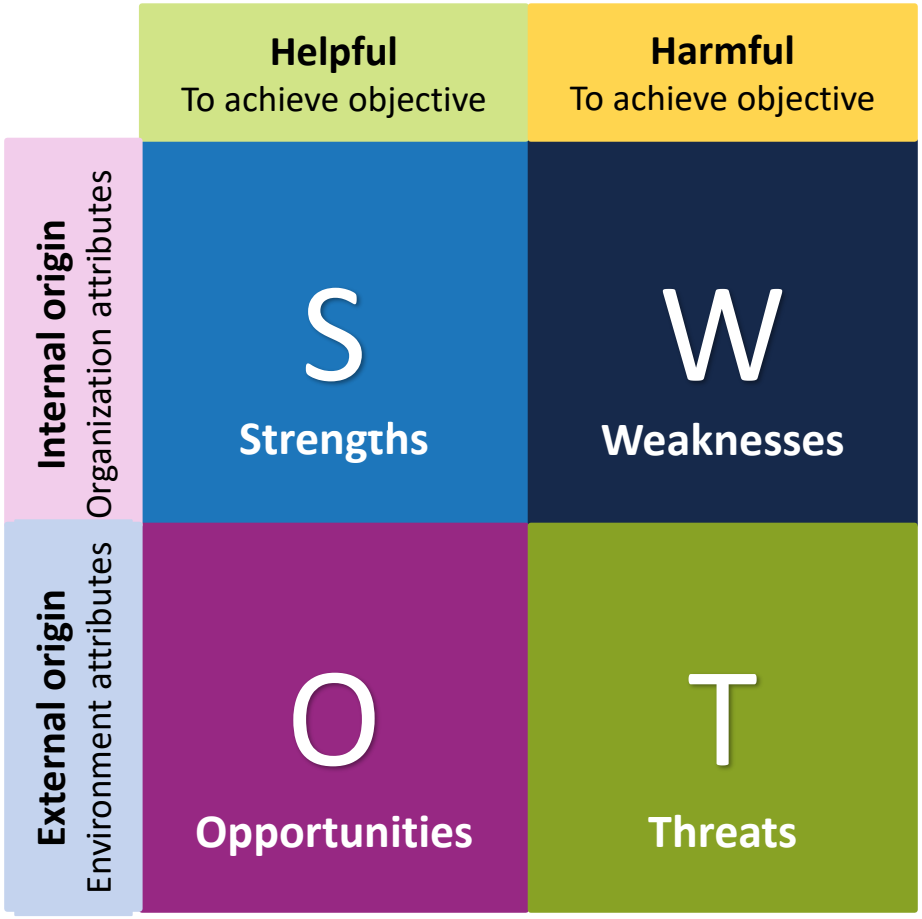
Key Activities

- Encourage continual improvement across the organization.
- Secure time and budget for continual improvement.
- Identify and log improvement opportunities.
- Assess and prioritize improvement opportunities.
- Make business cases for improvement action.
- Plan and implement improvements.
- Measure and evaluate improvement results.
- Coordinate improvement activities across the organization.

Continual Improvement Methods and Techniques

- Improvements can be executed using the Continual Improvement model.
- Identify a team to focus on leading continual improvement activities—but continual improvement is everyone's responsibility.
- Engage customers, suppliers, partners, and other stakeholders as appropriate.
- Accurate data is critical to driving effective improvements.
- From the available methods and techniques, choose the most appropriate ones for your organization.
- Methods and techniques include:
  - LEAN methods focus on waste reduction
  - Agile methods focus on iterative improvement
  - DevOps methods focus on working holistically and successful implementation
  - Balanced Scorecard
  - SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis

Sample SWOT Analysis

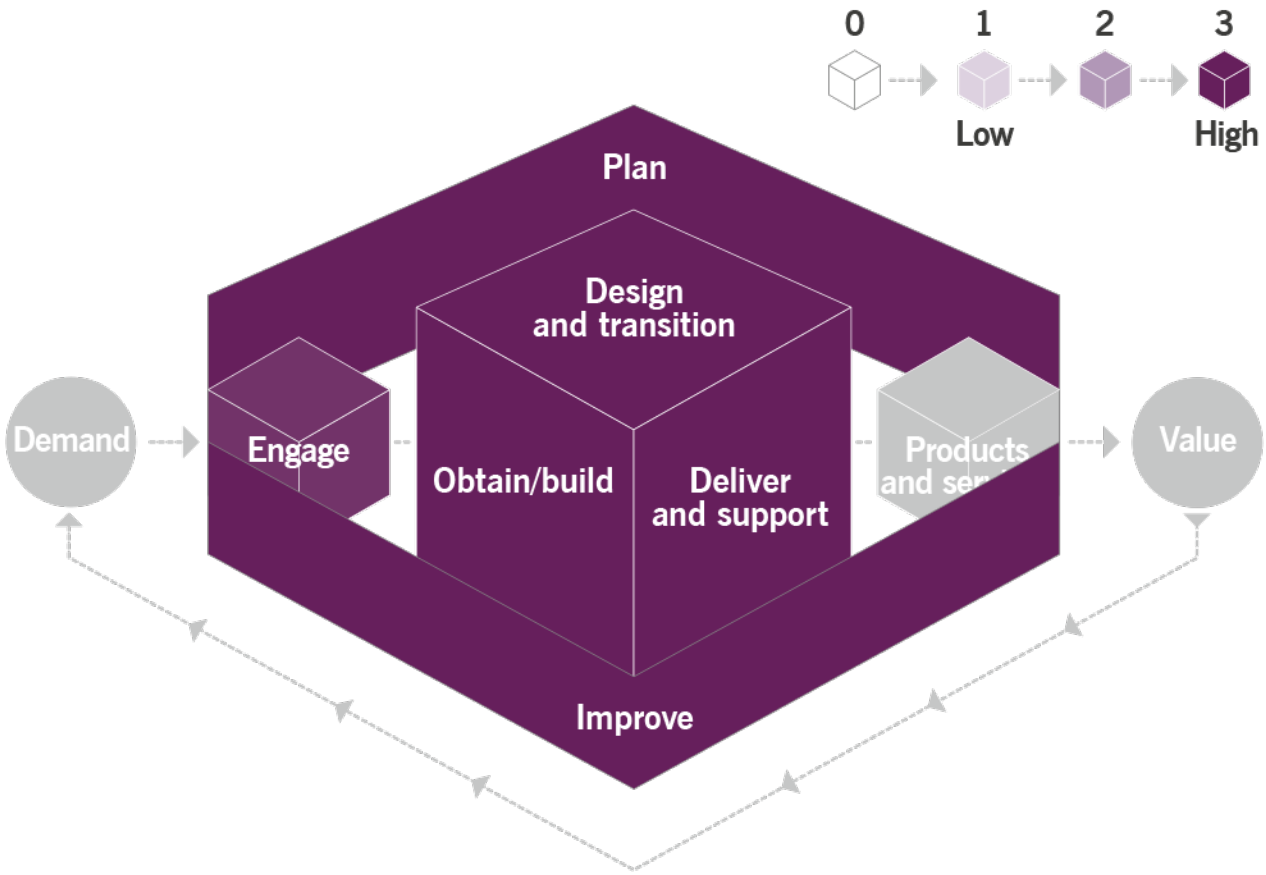


Continual Improvement Register

***Continual Improvement Register (CIR)**: A structured database or document used to track and manage improvement opportunities.*

- One or more CIRs; structured in a variety of ways.
  - Maintained on individual, team, departmental, business unit, and organizational levels.
  - Improvement ideas can initially be captured in other places or documents.
  - As new ideas are documented, improvement opportunities are constantly re-prioritized.
- CIRs help to make things visible and track:
  - What is currently being done.
  - What is already complete.
  - What has been set aside for further consideration at a later date.
- Most importantly, CIRs guarantee that improvement opportunities are:

Continual Improvement Heat Map and Value Chain



Activity

Analyzing the Continual Improvement Practice

Topic B

Service Level Management

Purpose of Service Level Management

- Set clear business-based targets for service performance so that the delivery of a service can be properly:
  - Assessed
  - Monitored
  - Managed
- Objective is end-to-end visibility.
  - 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 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 Agreements

***Service Level Agreement (SLA)**: A documented agreement between a service provider and a customer that identifies both services required and the expected level of service.*

- Measure the performance of services from the customer's point of view.
- Must reflect business context.
- Using SLAs may present many challenges, because they often do not fully reflect wider service performance or user experience.
- "Watermelon SLAs"

Service Level Agreement Requirements

- Related to a defined “service” in the service catalog, which is structured information about services and service offerings for a specific target audience.
- Relate to defined outcomes:
  - Customer satisfaction
  - Key business outcomes
- An agreement between the service provider and the service consumer.
  - Involve all stakeholders including partners, sponsors, users, and customers.
- Simply written and easy to understand and use for all parties.

Customer Engagement and Feedback

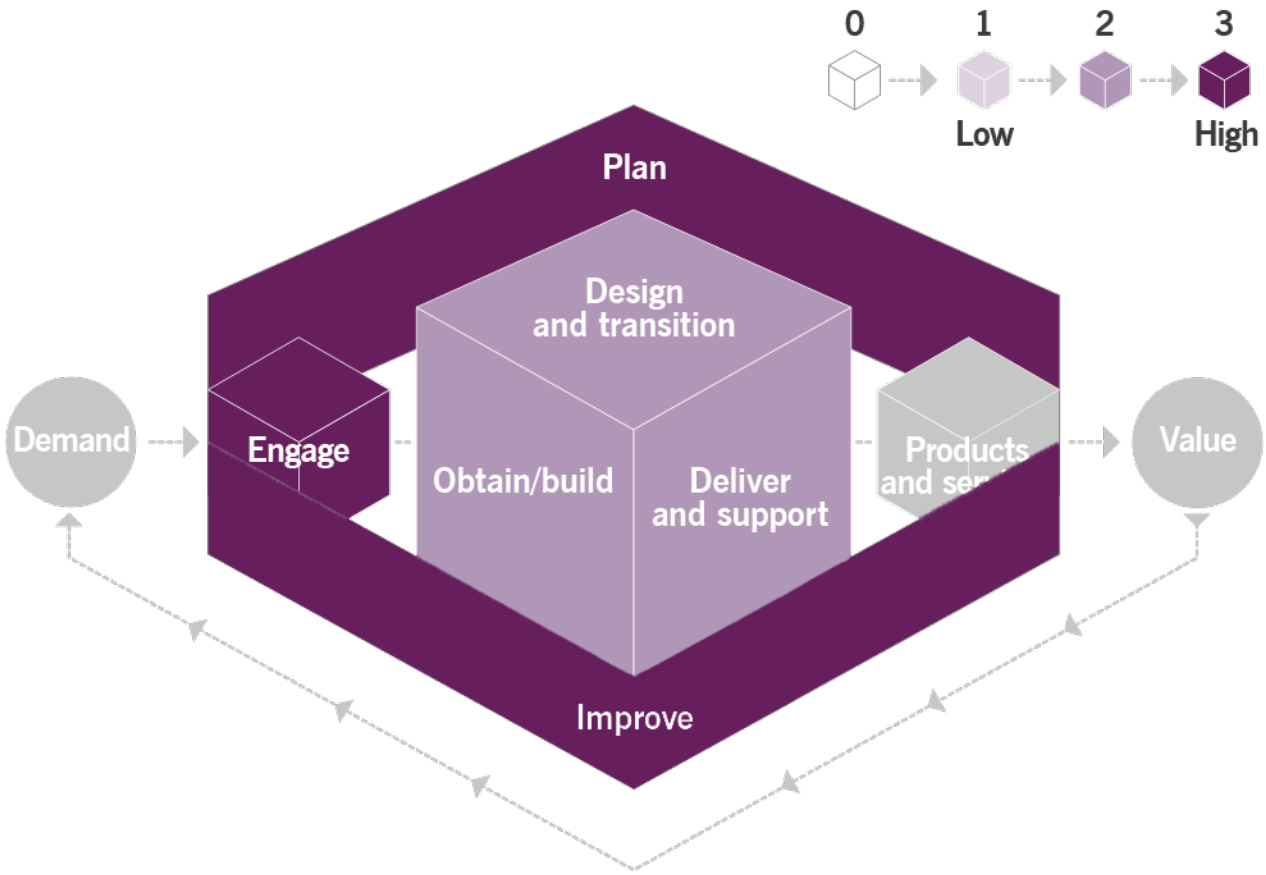
- Engagement is needed to understand and confirm the actual ongoing needs and requirements from customers.
- Listening is important as a relationship building and trust-building activity.
- Customer engagement questions:
  - What does your work involve?
  - How does technology help you?
  - What are your key business times, areas, people, and activities?
  - What differentiates a good day from a bad day for you?
  - Which of these activities is most important to you?
  - What are your goals, objectives, and measurements for this year?
  - What is the best measure of your success?
  - How do you base your opinion and evaluation of a service or IT/technology?
  - How can we help you more?
- Customer feedback methods:

Metrics

Metric: *A measurement or calculation that is monitored or reported for management and improvement.*

- **Operational metrics**
  - Low-level indicators of various operational activities:
    - System availability
    - Incident response and fix times
    - Change and request processing times
    - System response times
- **Business metrics**
  - Any business activity that is deemed useful or valuable by the customer:
    - Successful completion of a business activity

Service Level Management Heat Map and Value Chain



Activity

Analyzing the Service Level Management Practice

Topic C

Change Enablement

Purpose of Change Enablement

- Maximize the number of successful IT changes.
  - Assess risks properly
  - Authorize changes to proceed
  - Manage a change schedule
- 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.
- Change Authority:
  - Correct for each kind of change
  - Decentralized in high velocity organizations

Changes

***Change**: The addition, modification, or removal of anything that could have a direct or indirect effect on services.*

- Changes could affect a service directly or indirectly.
- Scope defined by each organization but generally includes changes to:
  - IT infrastructure
  - Applications
  - Documentation
  - Processes
  - Supplier relationships
  - Anything else that might directly or indirectly impact a product or service

Types of Changes

Standard changes

- Low-risk, pre-authorized, routine changes.
- Well-understood and fully documented.
- Implemented without needing additional authorization.
- Risk assessment repeated only if there is a modification to the way it is carried out.

Normal changes

- Use standard process to schedule, assess, and authorize change.
- Change models determine the roles for assessment and authorization.
- Initiation of a normal change is triggered by the creation of a change request.
- Organizations that have an automated pipeline for continuous integration and continuous deployment (CI/CD) often automate most steps of the change enablement process.

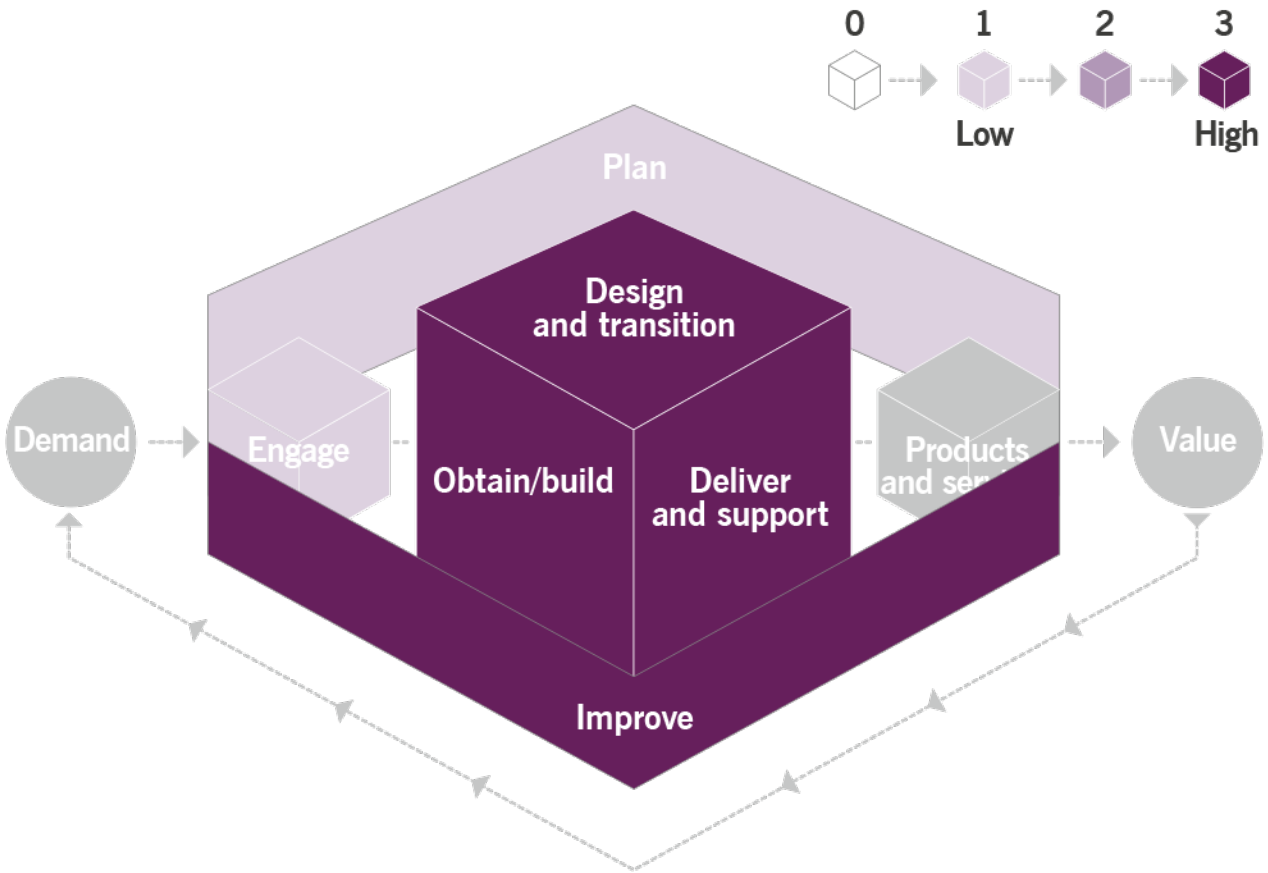
Emergency changes

- Must be implemented as soon as possible.
- Not typically included in a change schedule.
- Assessment and authorization is expedited.
- May be acceptable to defer some documentation and reduce testing.
- May also be a separate change authority.

Change Schedule

- Used to:
  - Plan changes
  - Assist in communication
  - Avoid conflicts
  - Assign resources
- Provides information about changes as needed for:
  - Incident Management
  - Problem Management
  - Continual Improvement
- Supports risk assessment to gather input from many stakeholders.
- Raises awareness and facilitates readiness.

Change Enablement Heat Map and Value Chain



Activity

Analyzing the Change Enablement Practice

Topic D

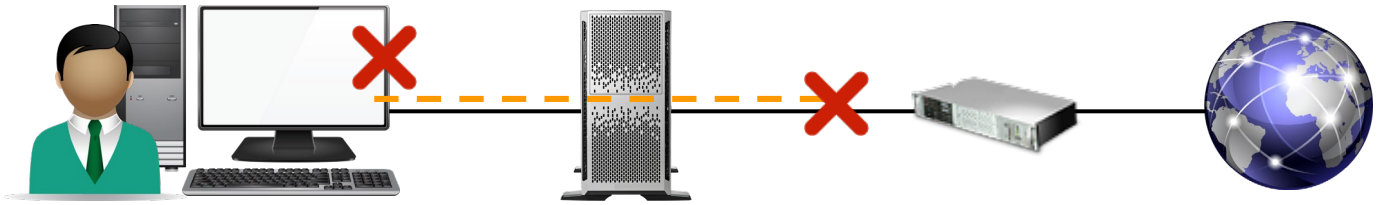
Incident Management

Purpose of Incident Management

- Minimize the negative impact of incidents by restoring normal service operation as quickly as possible.
- Incidents can have an enormous impact on:
  - Customer and user satisfaction.
  - Perception of the service provider.
- Every incident should be logged and managed.
- 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.
- Incidents are prioritized, based on agreed classification, to ensure that incidents with the highest business impact are resolved first.

Incidents

***Incident**: An unplanned interruption to a service, or reduction in the quality of a service.*



- Incidents reflect a user experience – “I can’t _____”
- Interruptions impact business workflows; objective is to minimize the impact
- Allocate resources based on the impact of the incident:
  - Major incidents require specialized, separate procedures for handling
  - Information Security incidents may require separate procedures as well
- Use suitable tool to track incident information
  - Provide links to configuration data, problems, changes, known errors, and knowledge
  - Might provide Automated Incident Matching
  - Incident Management activities should be timestamped and tracked

Incident Diagnosis and Resolution

Incidents can be diagnosed and resolved by people in different groups. In all cases, collaboration within and between teams is essential.

- **User self-help** – some users will help themselves
- **Service desk** – as the normal course of operations
- **Support team** – complex incidents routed based on incident category
- **Suppliers or partners** – who support the products and services they supply
- **Temporary team** – for the most complex incidents and all major incidents. The team may include representatives of many stakeholders.
- **Disaster Recover Plans** – for extreme cases

Incident Management

- Formal process for logging and managing incidents.
- Generally doesn't include detailed procedures for how to diagnose, investigate, and resolve incidents.
- Provides techniques for making investigation and diagnosis more efficient.
  - Scripts for collecting information from users during initial contact
  - May lead directly to diagnosis and resolution of simple incidents
- Investigation of more complicated incidents often requires knowledge and expertise, rather than procedural steps.

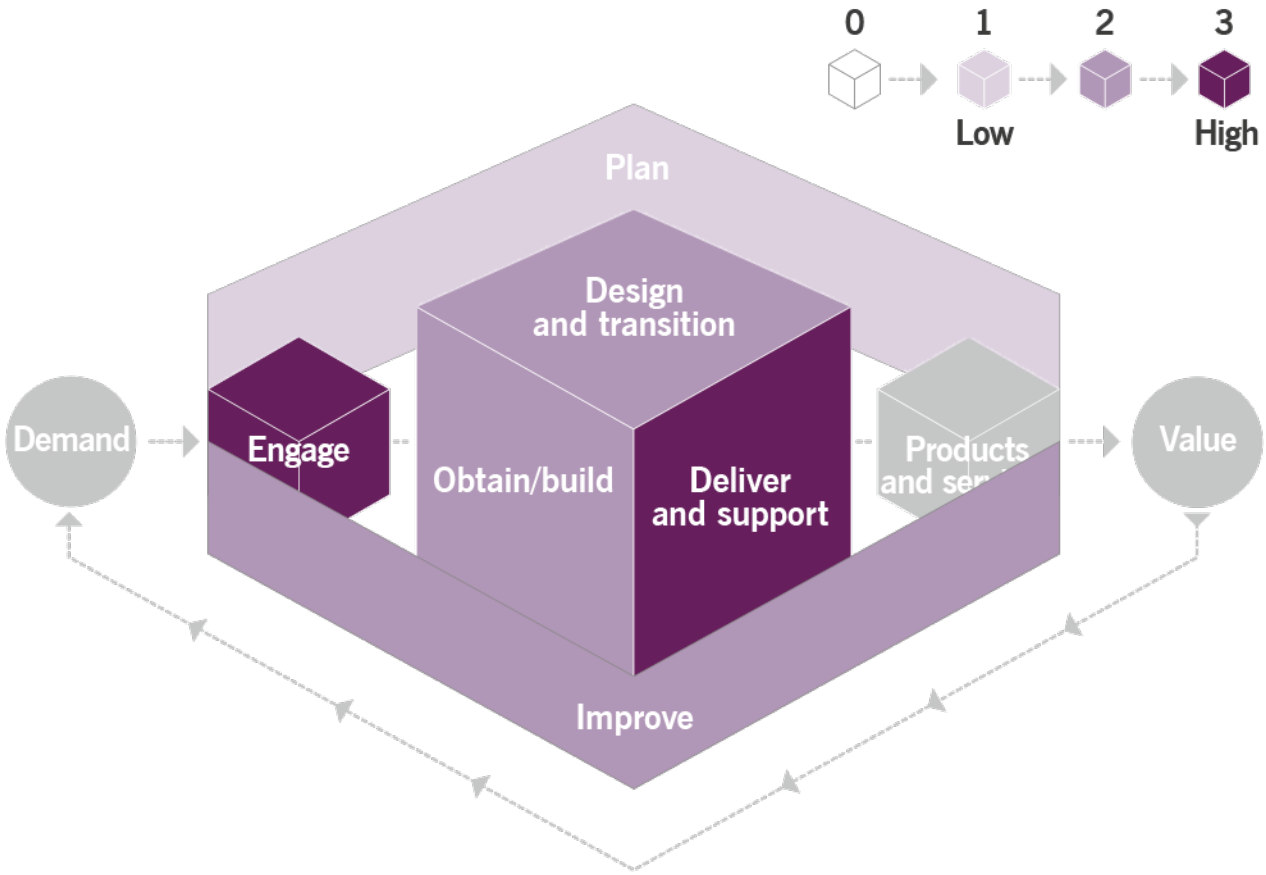
Incident Management and Suppliers

- Supplier support agreements must align to service provider commitments.
- Management of incidents may require frequent interaction with these suppliers.
- Suppliers can also act as a service desk, logging and managing all incidents and escalating to relevant subject matter experts or other parties as required.

Swarming

- Swarming is a popular technique for managing incidents.
- Initially, many different stakeholders work together until it becomes clear that certain people are in a better position to continue working so the others can be released to work on other things.
- Commonly used in work teams to quickly attack incidents so service is restored and teams and the other stakeholders stay on track.

Incident Management Heat Map and Value Chain



Activity

Analyzing the Incident Management Practice

Topic E

Service Request Management

Purpose of Service Request Management

- Supports the agreed quality of a service by handling all pre-defined, user-initiated service requests in an effective and user-friendly manner.
- Goal of this practice is to complete the requests as efficiently and in a streamlined manner as possible.
- Service requests are a normal part of service delivery (not an incident).
- Characteristics include:
  - Pre-defined and pre-agreed by the service provider and users.
  - Goal is a clear, standard procedure for initiation, approval, fulfillment, and management.
  - Well-known and proven steps to fulfill the request.
  - Set expectation times for fulfillment.
  - Provide clear communication of the status of the request to users.

Service Requests

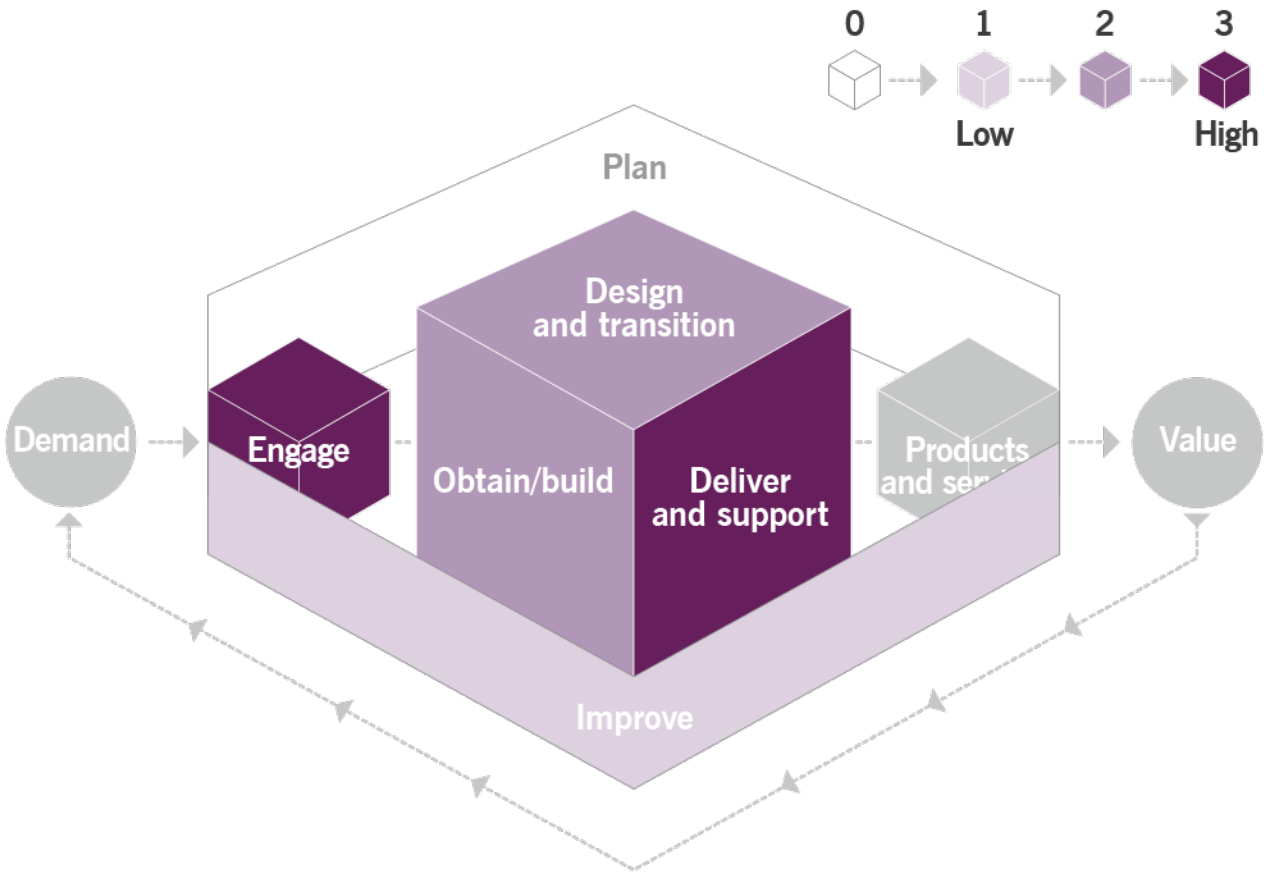
***Service request**: A request from a user or user's authorized representative that initiates a service action that has been agreed as a normal part of service delivery.*

- Each service request may include one or more of:
  - 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).

Guidelines for Handling Service Requests

- Service requests and their fulfillment should be standardized and automated to the greatest degree possible.
- Policies should be established regarding what service requests will be fulfilled with limited or even no additional approvals so that fulfillment can be streamlined.
- Set realistic expectations of users regarding fulfillment times.
- Opportunities for improvement should be identified and implemented to produce faster fulfillment times and take additional advantage of automation.
- Policies and workflows should be included for the documenting and redirecting of any requests that are submitted as service requests, but which should actually be managed as incidents or changes.

Service Request Management Heat Map and Value Chain



Activity

Analyzing the Service Request Management Practice

Topic F

Service Desk

Purpose of Service Desk

- Capture demand for incident resolution and service requests.
- The point of communication for the service provider with all of its users.
- Focus is to provide support for “people and business.”
  - Not simply technical issues
  - Get matters arranged, explained, and coordinated
- Will continue to require help from other support teams.
- Maybe technical, maybe not.
- Major influence on user experience and their perception of the service provider.
- Must understand business context.

Service Desk

***Service desk**: The point of communication between the service provider and all of its users.*

- The entry point/single point of contact for the IT or service organization.
  - Report issues, queries, and requests
  - Have them acknowledged, classified, owned, and actioned
  - Many different models

Access Channels

Channel	Description
Phone calls	• Specialized technology, such as IVR, conference calls, voice recognition, etc.
Service portals and mobile applications	• Supported by service and request catalogues and knowledge bases
Chat	• Live chats • Chatbots
Email	• Logging and updating contact with users • Follow-up surveys and confirmations
Walk-in service desks	• Staffed by service personnel • Provide personal support
Text and social media messaging	• Provides a way to contact stakeholders • Can be used to notify users in case of major incidents • Provides a way for users to request support
Public and corporate discussion forums	• Enables users to contact the service provider • Provides peer-to-peer support

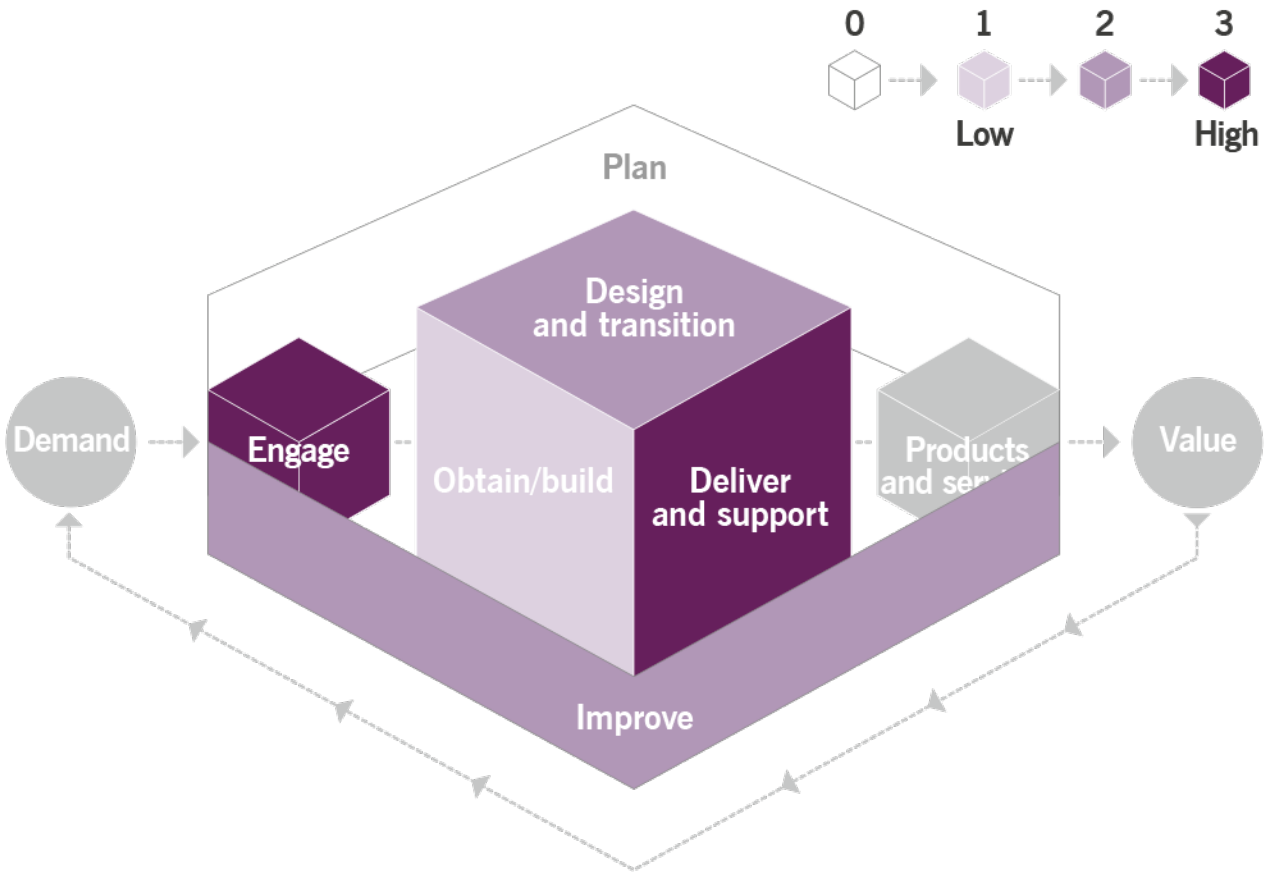
Training and Competencies

- Service desk personnel need to diagnose incidents in terms of business priority and to take appropriate action to get them resolved using available skills, knowledge, people, and processes.
- Must also possess broad technical and business area skills:
  - Excellent customer service skills
  - Empathy
  - Effective communication skills
  - Emotional intelligence
  - Incident analysis skills to diagnose and prioritize incidents to resolve them
  - Understanding of business priority

Supporting Tools

- Intelligent telephony systems, incorporating computer-telephony integration, interactive voice response, and automatic call distribution
- Workflow systems for routing and escalation
- Workforce management and resource planning systems
- Knowledge base
- Call recording and quality control
- Remote access tools
- Dashboard and monitoring tools
- Configuration management systems
- Virtual service desks—often require more sophisticated access, routing, and escalation tools

Service Desk Heat Map and Value Chain



Activity

Analyzing the Service Desk Practice

Topic G

Problem Management

Purpose of Problem Management

- Reduce the likelihood and impact of incidents.
- Identify actual and potential causes of incidents.
- Manage workarounds and known errors.
- All services have errors, flaws, or vulnerabilities that may cause incidents.
  - Many errors are identified and resolved before a service goes live
  - Some remain unidentified, or unresolved, and may be a risk to live services

Problems and Known Errors

***Problem**: A cause or potential cause of one or more incidents.*

***Known error**: A problem that has been analyzed and has not been resolved.*

- Problems are unknown root causes of incidents.
- Known errors are diagnosed root causes of incidents, but which have not yet been resolved.

Distinguishing Incidents from Problems

- Problems are related to incidents but should be managed in different ways.
  - Incidents have an impact on users or business processes. They 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.
  - Not every problem needs to be investigated and analyzed. Resolving the highest-priority problems can be more valuable to the organization.
- The Problem Management practice reduces the number and impact of future incidents with:
  - Real fixes that remove the errors.
  - Workarounds for errors that can't be removed (or it's not cost-justifiable to remove).

Phases of Problem Management

Problem Identification

- Identify and log problems.
  - Trend analysis of incident records.
  - Recurring issues by users, service desk, and technical support staff.
- Major incident management identifying a risk that an incident could recur.
- Information from suppliers and partners.
- Information received from internal developers, test teams, and project teams.

Problem Control

- Main activities:
  - Problem analysis
  - Documenting workarounds and known errors
- Prioritize problems based on risk so you can deal with highest-priority problems.
  - Analyze the highest priority problems
  - Not essential to analyze every problem
- Incidents typically have many interrelated causes, and the relationships between them can be complex.
- Problem control should consider all contributory causes:
  - Duration and impact of incidents
  - Analyze problems from the perspective of all four dimensions of service management

Workarounds

***Workaround**: A solution that reduces or eliminates the impact of an incident or problem for which a full resolution is not yet available. Some workarounds reduce the likelihood of incidents.*

- Workarounds can become a permanent way of dealing with some problems:
  - When resolving the problem is not viable
  - When resolving the problem is not cost-effective
- Problem remains in the known error status, and the documented workaround is applied whenever a related incident occurs.
- Some workarounds can be automated.

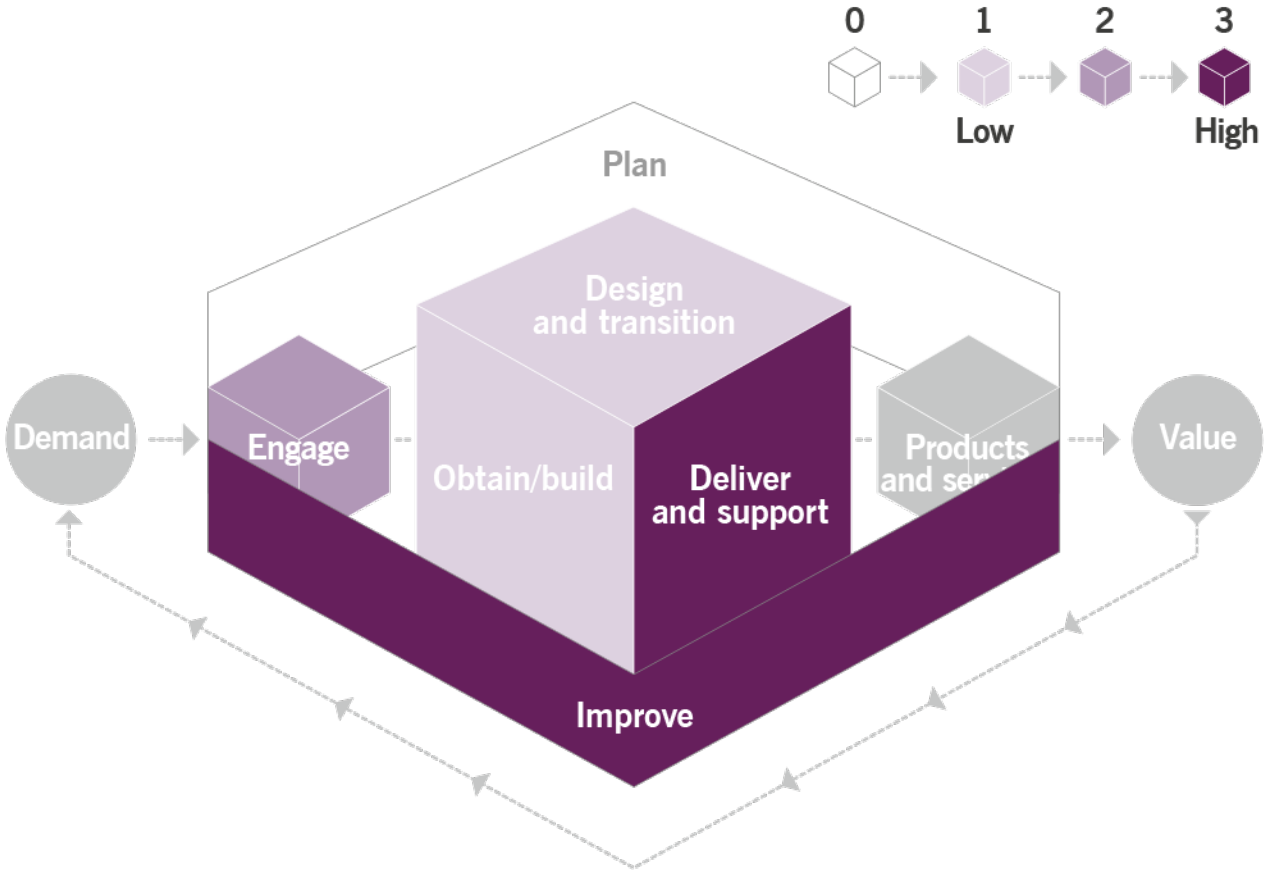
Error Control

- Manages known errors; usually means that faulty components have been identified.
- Includes identification of potential permanent solutions.
- 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.
- Reassesses the status of known errors that have not been resolved.
  - Impact on customers
  - Availability and cost of permanent resolutions
  - Effectiveness of workarounds
- The effectiveness of workarounds should also be evaluated each time used.

Practice Interactions

- Problem Management is closely related to Incident Management.
  - Design the two practices to work together within the service value chain.
  - Activities may complement or conflict.
- Interfaces between Problem Management, Risk Management, Change Enablement, Knowledge Management, and Continual Improvement.
  - Problem Management activities may be a specific case of Risk Management.
  - Problem resolution may fall outside Problem Management and come under Change Enablement.
  - Problem Management and Knowledge Management have a two-way relationship.
    - Problem Management output includes workarounds and known errors.
    - Problem Management may utilize Knowledge Management information to investigate, diagnose, and resolve problems.
  - Problem Management may reveal Continual Improvement opportunities in all four dimensions of service management.
    - May produce problem solutions to include in a CIR.
    - May use CI techniques to prioritize and manage.

Problem Management Heat Map and Value Chain



Activity

Analyzing the Problem Management Practice

Reflective Questions

1. Does your organization have separate practices for problem and incident management? What are the potential risks of treating problems and incidents as part of a traditional troubleshooting model?

2. How do you think having a specific Continual Improvement practice in your organization would contribute to driving continual improvement through the SVS?

Other ITIL® Practices

- General Management Practices
- Service Management Practices
- Technical Management Practices

Topic A

General Management Practices

Relationship Management

- **Purpose**: To establish and nurture the links between the organization and its stakeholders at strategic and tactical levels.
- Activities include identifying, analyzing, monitoring, and facilitating the continual improvement of relationships with stakeholders.
- The Relationship Management practice should:
  - Understand the needs and drivers of stakeholders to appropriately prioritize products and services.
  - Obtain a high level of stakeholder satisfaction.
  - Establish and maintain a constructive relationship between the organization and stakeholders.
  - Effectively establish and articulate priorities for new or changed products and services, making sure they align with desired business outcomes.
  - Satisfactorily handle any stakeholders' complaints and escalations.
  - Appropriately mediate conflicting stakeholder requirements.
- Ultimate goal is to facilitate and maintain positive relationships with stakeholders to ensure value creation for all stakeholders and the organization.

Information Security Management

- **Purpose**: To protect the information needed by the organization to conduct its business.
  - Understand and manage risks to confidentiality, integrity and availability of information, authentication, and non-repudiation.
- Establish policies, processes, behaviors, risk management, and controls, which must maintain a balance between:
  - **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.
- Information Security interacts with every other ITIL practice.
- Balance the needs for security controls with the needs for innovation.
- Must be driven from the most senior level in the organization, based on clearly understood governance requirements and organizational policies.
- Very dependent on the behavior of people!

Supplier Management

- **Purpose**: To ensure that the organization's suppliers and their performance are managed appropriately to support the provision of seamless, quality products and services.
  - Create closer, more collaborative relationships.
  - Uncover and realize new value.
  - Reduce risk of failure.
- Key activities include:
  - Create a single point of visibility and control to ensure consistency.
  - Maintain a supplier strategy, policy, and contract management information.
  - Negotiate and agree on contracts and arrangements.
  - Manage relationships and contracts with internal and external suppliers.
  - Manage supplier performance.
- Supplier models:

Activity

Discussing the General Management Practices

Topic B

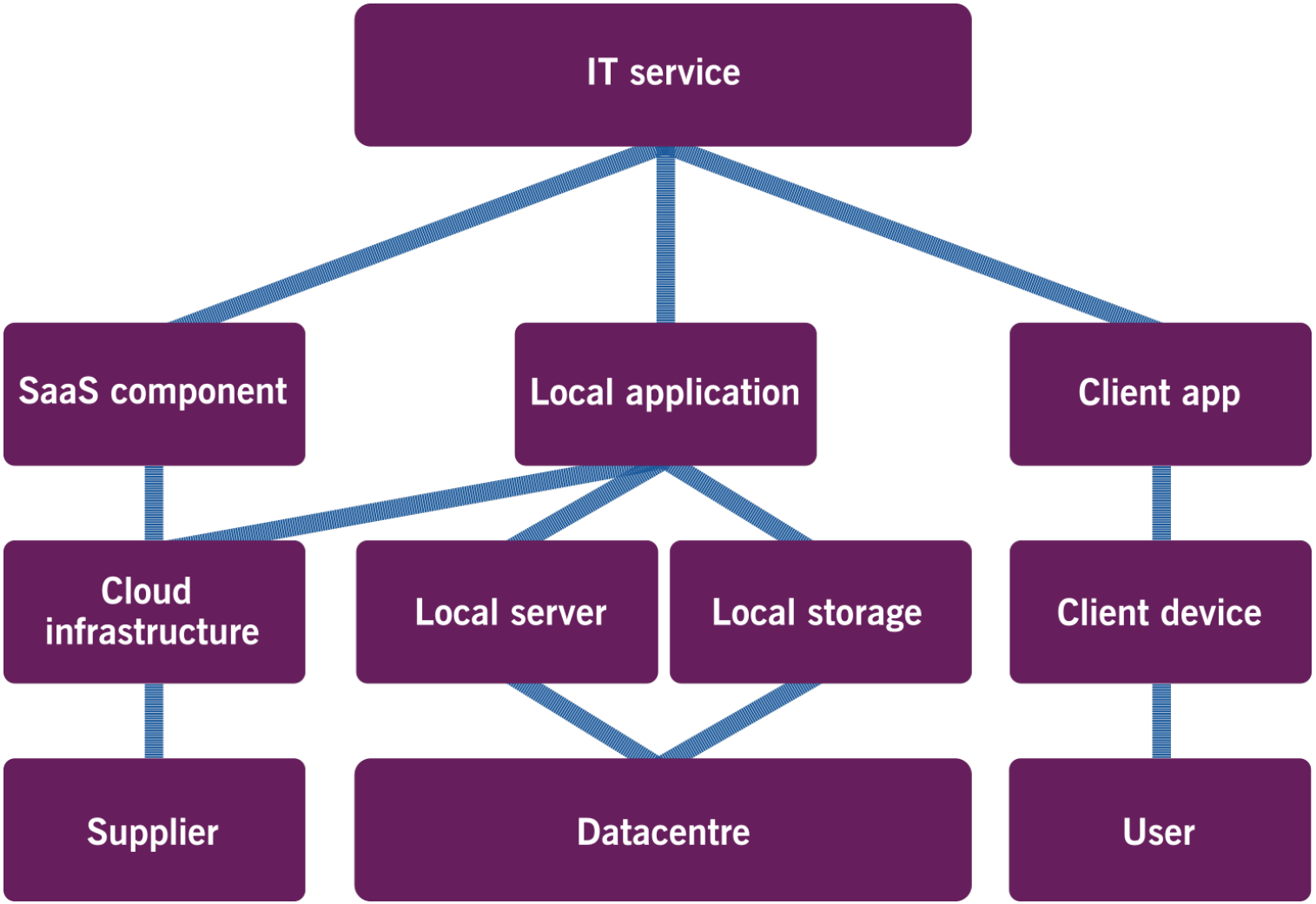
Service Management Practices

Service Configuration Management

***Configuration Item (CI)**: Any component that needs to be managed in order to deliver an IT service.*

- **Purpose**: To ensure that accurate and reliable information about the configuration of services, and the CIs that support them, is available when and where it is needed. This includes information on how CIs are configured and the relationships between them.
- Collects and manages information about a wide variety of CIs, typically including:
  - Hardware
  - Software
  - Networks
  - Buildings
  - People
  - Suppliers
  - Documentation
- Services are also treated as CIs

Simplified Service Model for a Typical IT Service



IT Asset Management

***IT asset**: Any financially valuable component that can contribute to delivery of an IT product or service.*

- **Purpose**: To plan and manage the full lifecycle of all IT assets, to help the organization:
  - Maximize value
  - Control costs
  - Manage risks
  - Support decision-making about purchase, reuse, and retirement of assets
  - Meet regulatory and contractual requirements
- Activities include:
  - Define, populate, and maintain the asset register.
  - Control the asset lifecycle in collaboration with other practices.
  - Provide current and historical data, reports, and support to other practices.
  - Audit assets, related media, and conformity.

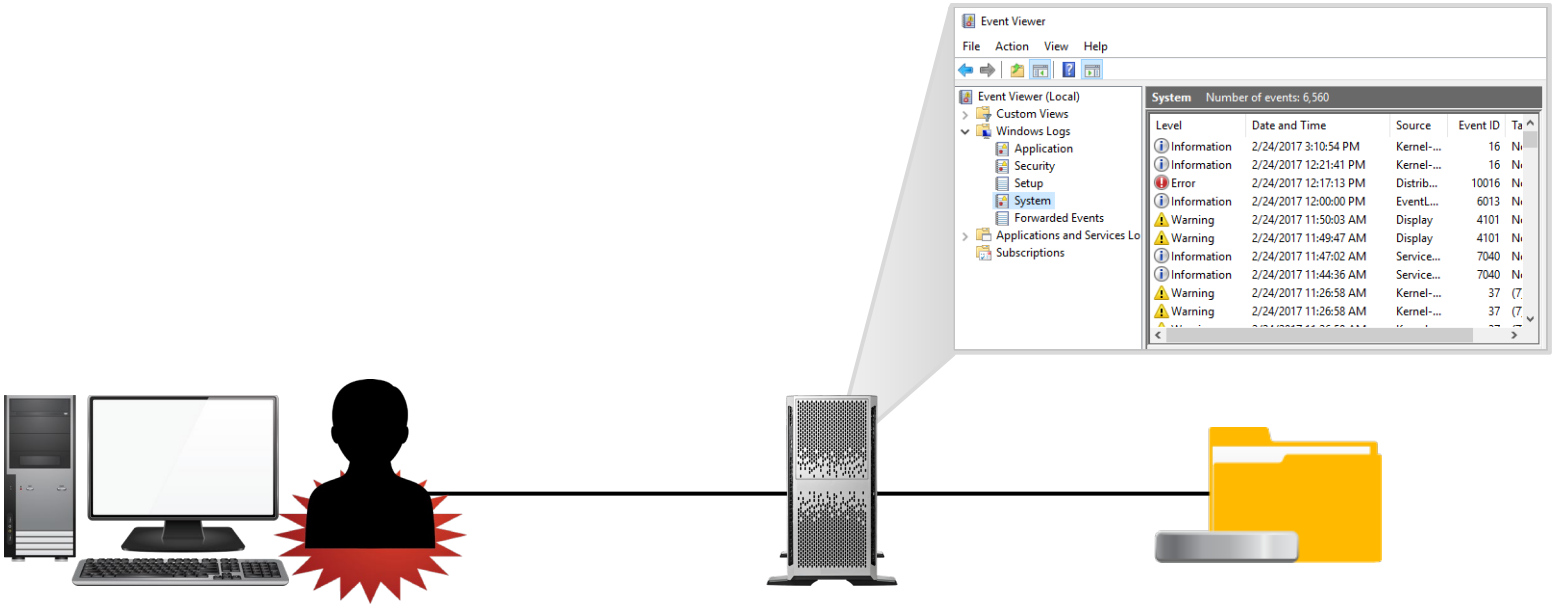
Monitoring and Event Management

***Event**: Any change of state that has significance for the management of an IT service or other configuration item (CI).*

- **Purpose**: To systematically observe services and service components, record and report selected changes of state identified as events.
- Events are typically recognized through notifications created by a service, CI, or monitoring tool.
- Identify and prioritize events, including infrastructure, services, business processes, and information security events.
- Establishes the appropriate response.

Key Activities of Event Management

- What should be monitored, and establishing the monitoring strategy
- Implementing and maintaining monitoring
- Establishing and maintaining thresholds
- Establishing and maintaining policies for event handling
- Implementing processes and automations

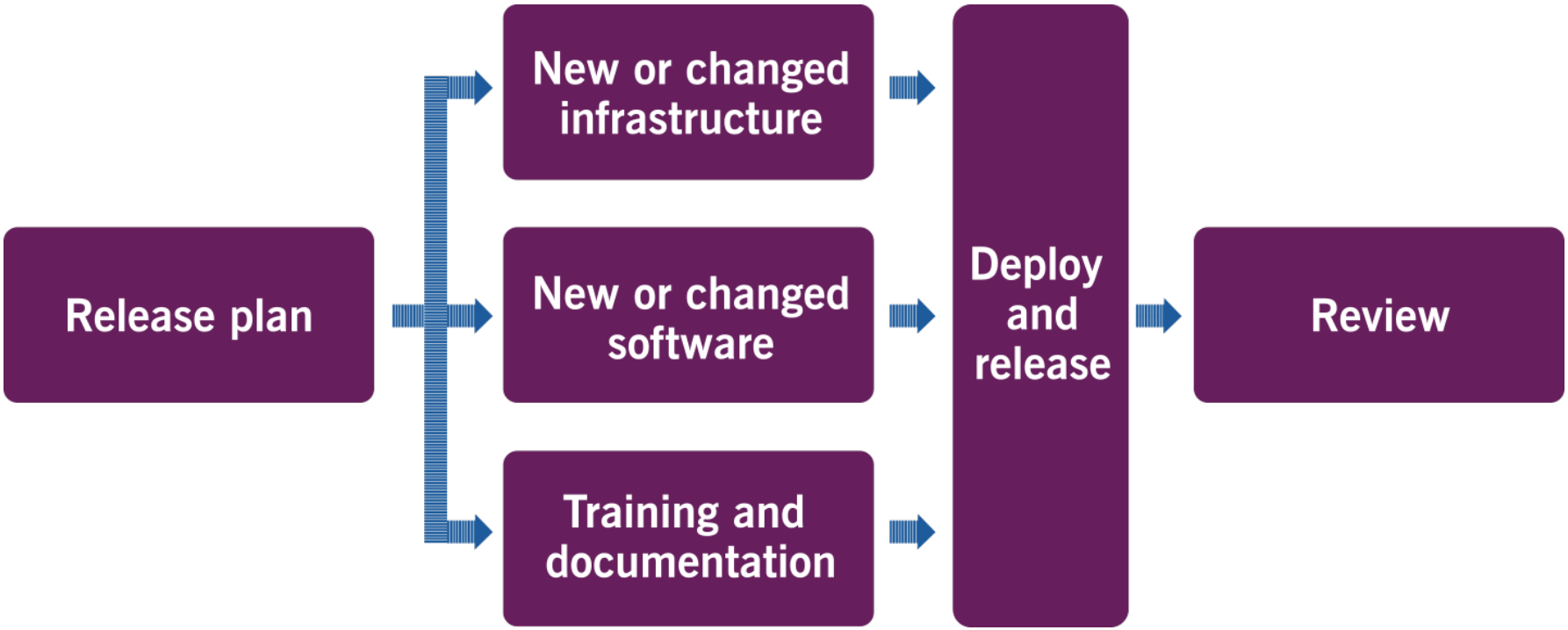


Release Management

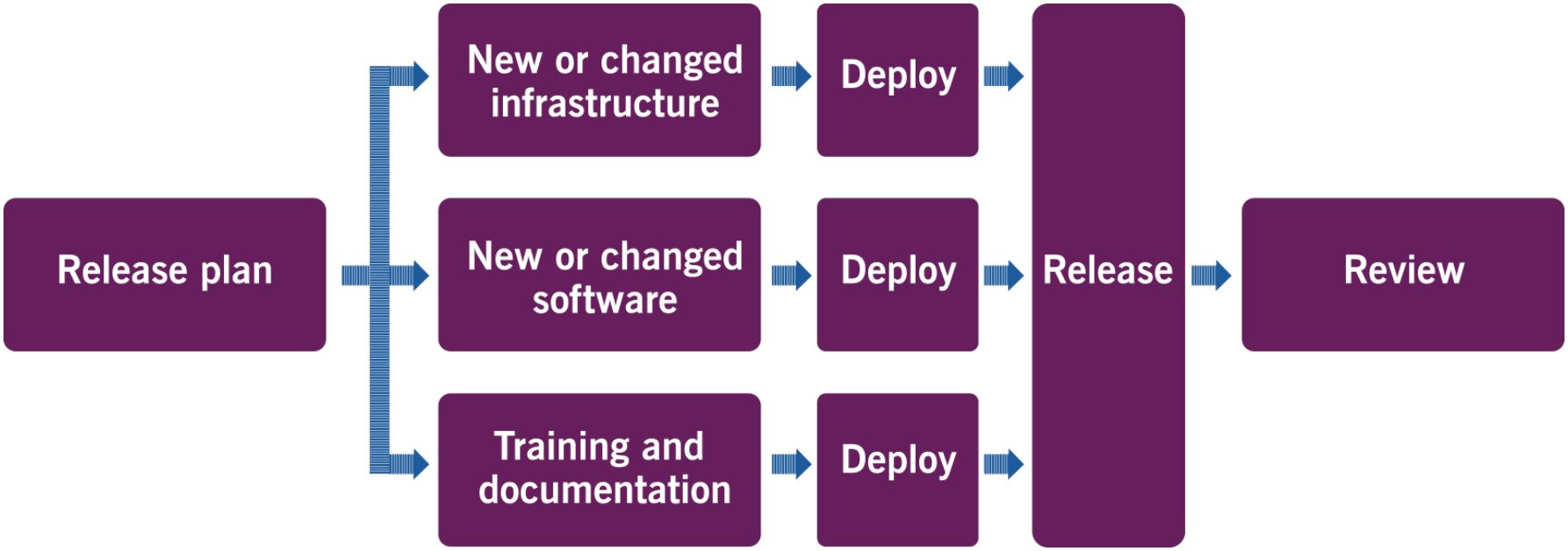
***Release**: A version of a service or other configuration item, or a collection of configuration items, that is made available for use.*

- **Purpose**: To make new and changed services and features available for use.
- Release components could include:
  - Infrastructure and application components
  - Documentation
  - Training (for users or IT staff)
  - Updated processes or tools
  - Any other needed components
- Release plans and release schedules
- Waterfall vs. Agile approaches
  - Traditional/Waterfall: Release occurs before deployment
  - Agile/DevOps: Deployment occurs before release

Release Management in Traditional/Waterfall Environments



Release Management in Agile/DevOps Environments



Activity

Discussing the Service Management Practices

Topic C

Technical Management Practices

Deployment Management

- **Purpose**: To move new or changed hardware, software, documentation, processes, or any other component to live environments. It may also be involved in deploying components to other environments for testing or staging.
- Collaborates closely with Release Management and Change Enablement practices.
- Encompasses hardware provisioning and software deployment.
- Deployment approaches:
  - Phased deployment
  - Continuous delivery
  - Big bang deployment
  - Pull deployment
- Secured locations for deployment:
  - Definitive Media Library for software code
  - Definitive Hardware Store for physical hardware spares
- Often highly automated and even self-service.

How Deployment is Evolving

- Traditionally, deployment is a high-risk event.
- Change errors are a major cause of incidents.
- New practices, such as Agile and DevOps, attempt to make deployment activities more routine and frequent to minimize the incidents and errors.
- Additional technical practices that have been successful include:
  - Automating the deployment pipeline.
  - Emphasizing high quality.
  - Using automated testing methods.
  - Using small batch sizes.
  - Maintaining rigorous version control of applications and environments.

Activity

Discussing the Technical Management Practices

Reflective Questions

1. How does your organization manage deployment, release, and change enablement?

2. How does your organization implement service configuration and IT asset management? How do you use the information you generate?