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ITIL® Foundation in IT Service Management

Presentation	Version	Date	Created by	Comments
ITIL 2011 Foundation Course Material	Ver. 1.0 – Based on ITIL 2011 Version	30th Sept 2012	Girish Aras	First version created.
ITIL 2011 Foundation Course Material	Ver. 2.0 – Based on ITIL 2011 Version	20th July 2013	Girish Aras	Modified the contents as per **"The ITIL Foundation Certificate Syllabus v5.5.docx"** produced by Office of Cabinet, Official ITIL accreditor.

Introductions
Trainer and participants

Setting the expectations

Course material distribution

Ground rules

Timings

Course Objectives

This entrance level offers a general awareness of the Service Lifecycle and its key elements, overall linkages between the stages in the Lifecycle, the processes used and their contribution to service management practices

The course is not enough to enable the participants to apply the ITIL® practices for Service Management without further guidance.

Candidates can expect to gain competencies in the following upon successful completion of the course

- Service Management as a practice (Comprehension)
- Service Lifecycle (Comprehension)
- Key Principles and Models (Comprehension)
- Generic Concepts (Awareness)
- Selected Processes (Awareness)
- Selected Roles (Awareness)
- Selected Functions (Awareness)
- Technology and Architecture (Awareness)

Qualification Scheme

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Module 1

Service management as a practice

What is ITIL?

- UK's Cabinet Office has documented a set of processes and procedures for the delivery and support of high quality IT services . These processes and procedures are referred to as the Information Technology Infrastructure Library (ITIL).

- The ITIL Library has the following components:
  - The **ITIL Core**: best practice guidance applicable to all types of organizations who provide services to a business.
  - The **ITIL Complementary Guidance**: a complementary set of publications with guidance specific to industry sectors, organization types, operating models, and technology architectures.

- ITIL is not intended to be rigidly applied
- Current version of ITIL is **2011** released on June 2011.

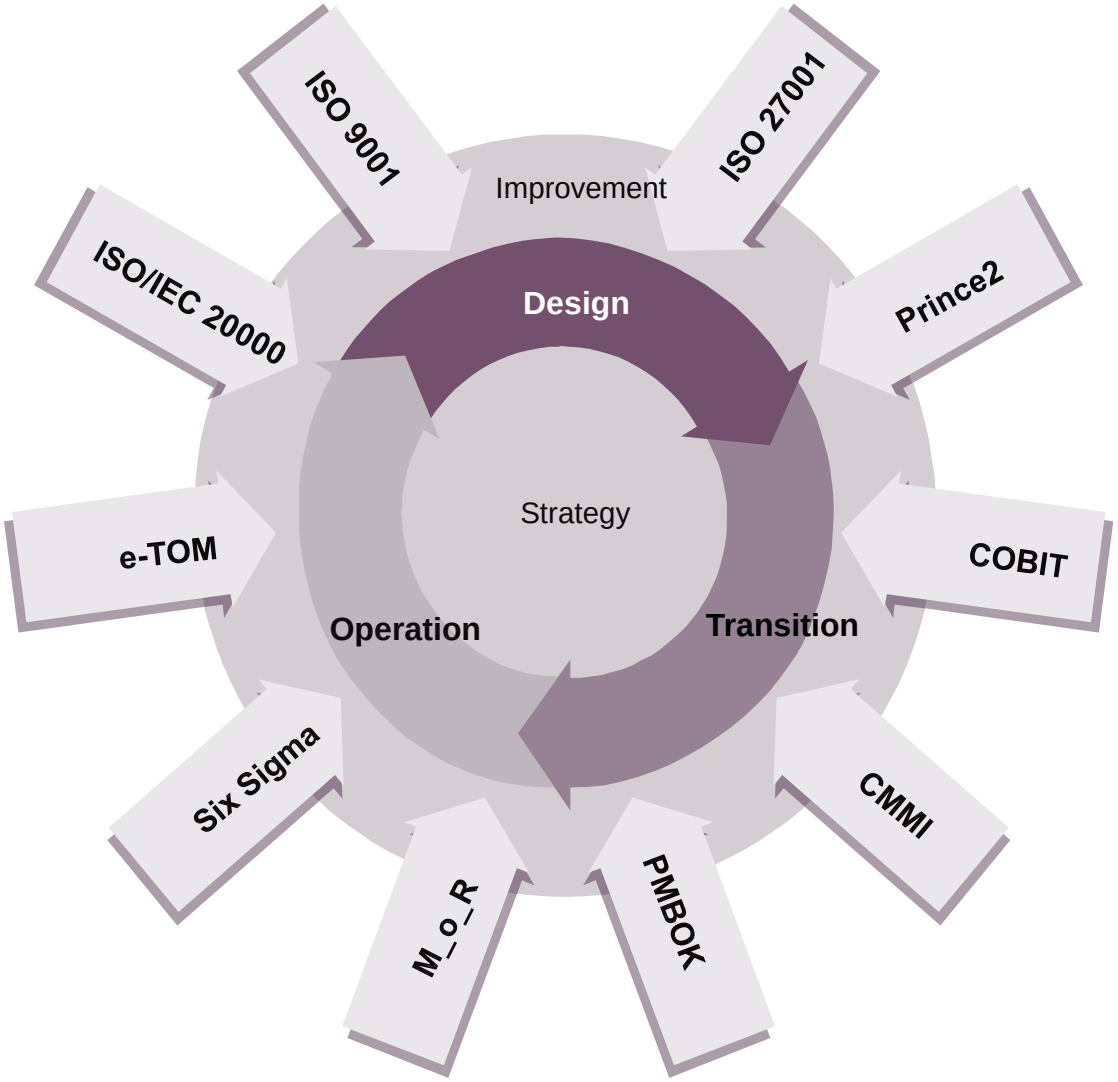
Why ITIL is Successful?

- **Vendor-neutral** ITIL service management practices are applicable in any IT organization because they are not based on any particular technology platform or industry type.

- **Non-prescriptive** ITIL offers robust, mature and time-tested practices that have applicability to all types of service organization. Organizations should adopt ITIL and adapt it to meet the needs of the IT organization and their customers.

- **Best practice** ITIL represents the learning experiences and thought leadership of the world's best-in-class service providers.

Public Frameworks and standards relevant to Service management



Services

Service: A means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific costs and risks.

IT service: A service provided by an IT service provider. An IT service is made up of a combination of information technology, people and processes.

***A service is*:**

- End- to end
- As perceived by Users and customer
- Provider owns the **cost and risks**

***A service is NOT*:**

- Infrastructure component
- Technology & Products

Good Examples of Service:

- **Email**
- **Payroll system**
- **Internet access**
- **Internet Banking**

Bad Examples of Service:

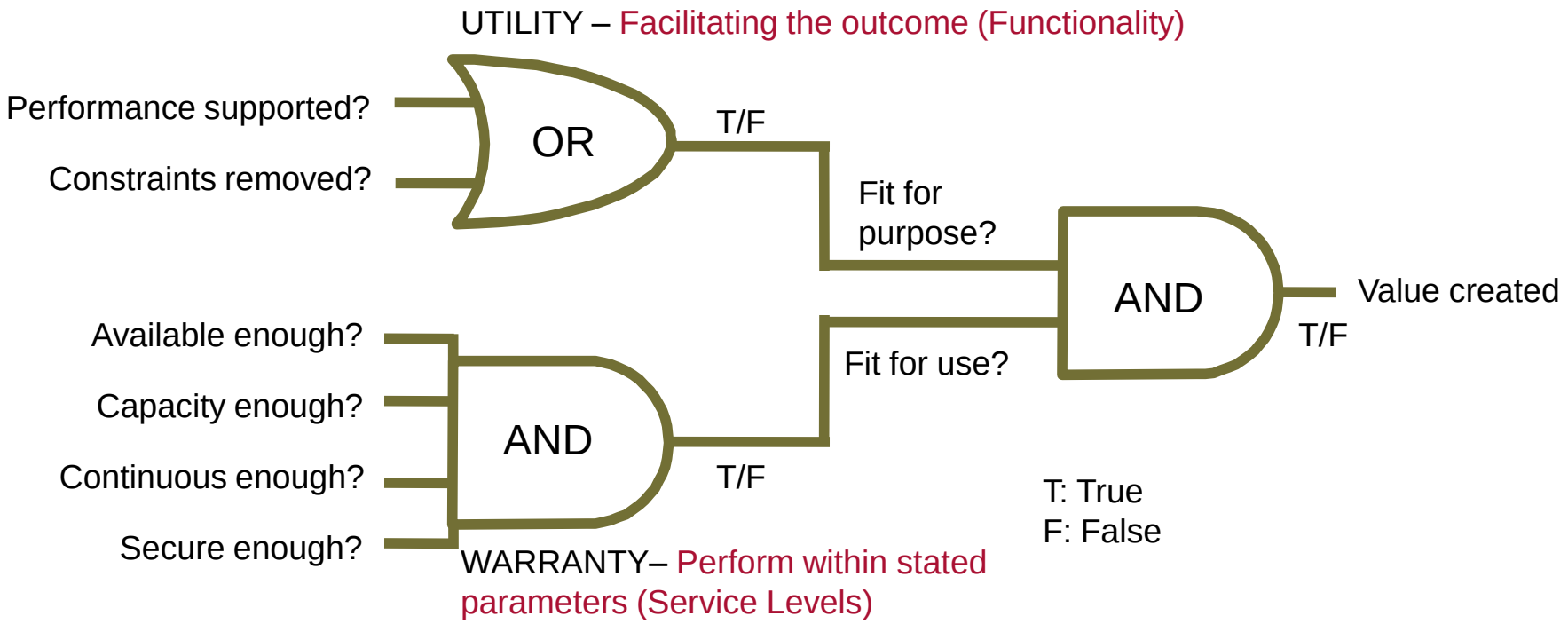
- ☒ **Wide Area Network**
- ☒ **Unix Server**
- ☒ **Firewall**
- ☒ **Oracle Database**

Definition: outcome
The result of carrying out an *activity*, following a process, or delivering an *IT service* etc. The term is used to refer to intended results, as well as to actual results.

Characteristics of a Service

- **Intangibility** – The outcome of a service does not exist physically.
- **Perishability** – A service cannot be stored for future use. The delivery and the consumption of the service happens simultaneously.
- **Inseparability** – The production and consumption of services cannot be separated. It is consumed while it is being produced.
- **Variability** – The quality and consistency of service might vary for every attempt of service delivery.

Value of a Service



Types of Services

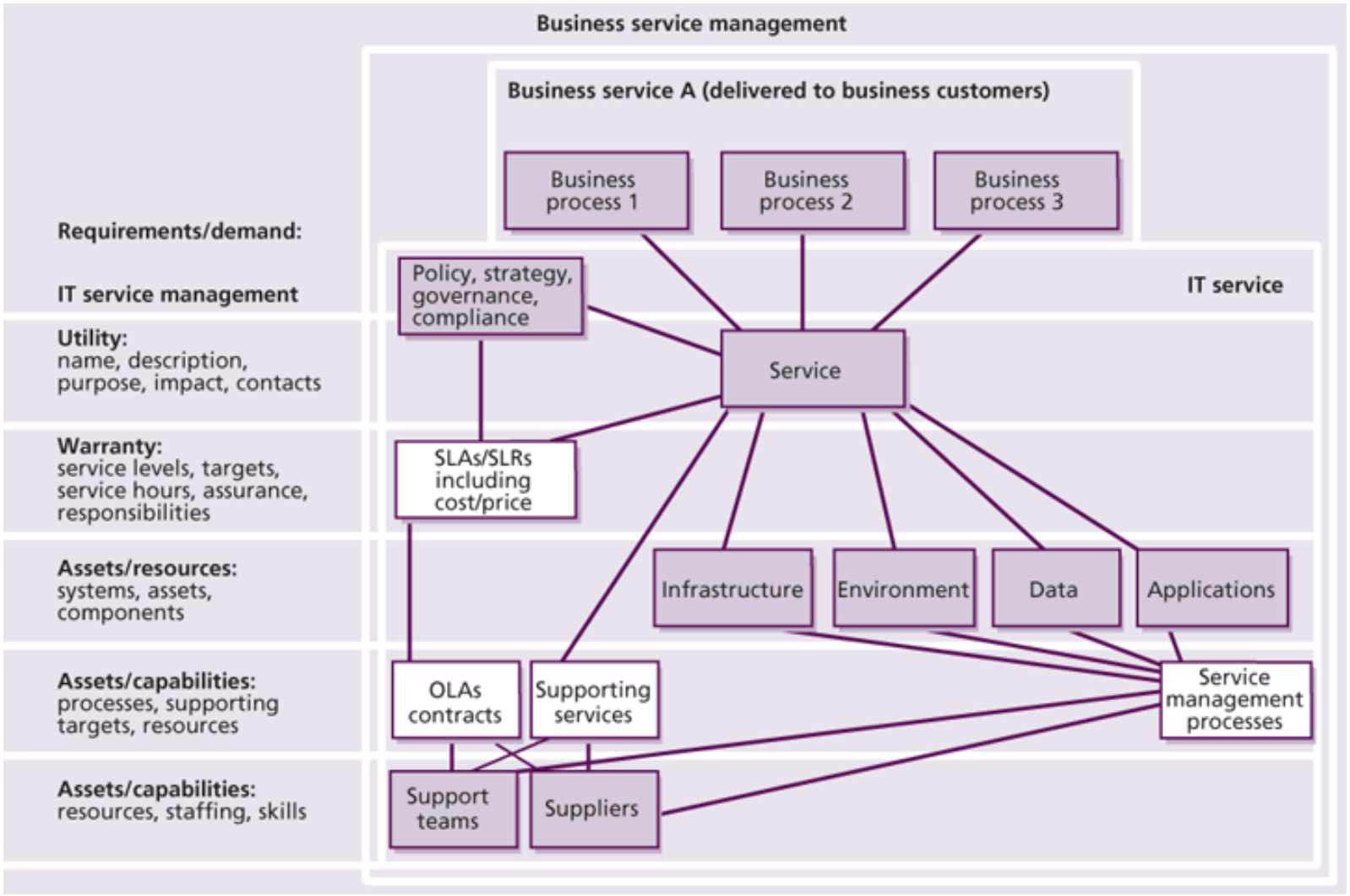
Core services deliver the basic outcomes desired by one or more customers. They represent the value that the customer wants and for which they are willing to pay.

Enabling services are services that are needed in order for a core service to be delivered. They are ‘basic factors’ which enable the customer to receive the ‘real’ (core) service.

Enhancing services are services that are added to a core service to make it more exciting to the customer. Enhancing services are not essential to the delivery of a core service.

A service package is a collection of two or more services that have been combined to offer a solution to a specific type of customer need. A service package can consist of a combination of core services, enabling services and enhancing services.

Service Composition



Service Management

- **Service management** is a set of specialized organizational capabilities for providing value to customers in the form of services.

- **Key Stakeholders in Service Management**

  – **Customers** Those who buy goods or services. The customer of an IT service provider is the person or group who defines and agrees the service level targets.
    - **Internal customers** These are customers who work for the same business as the IT service provider.
    - **External customers** These are customers who work for a different business from the IT service provider.

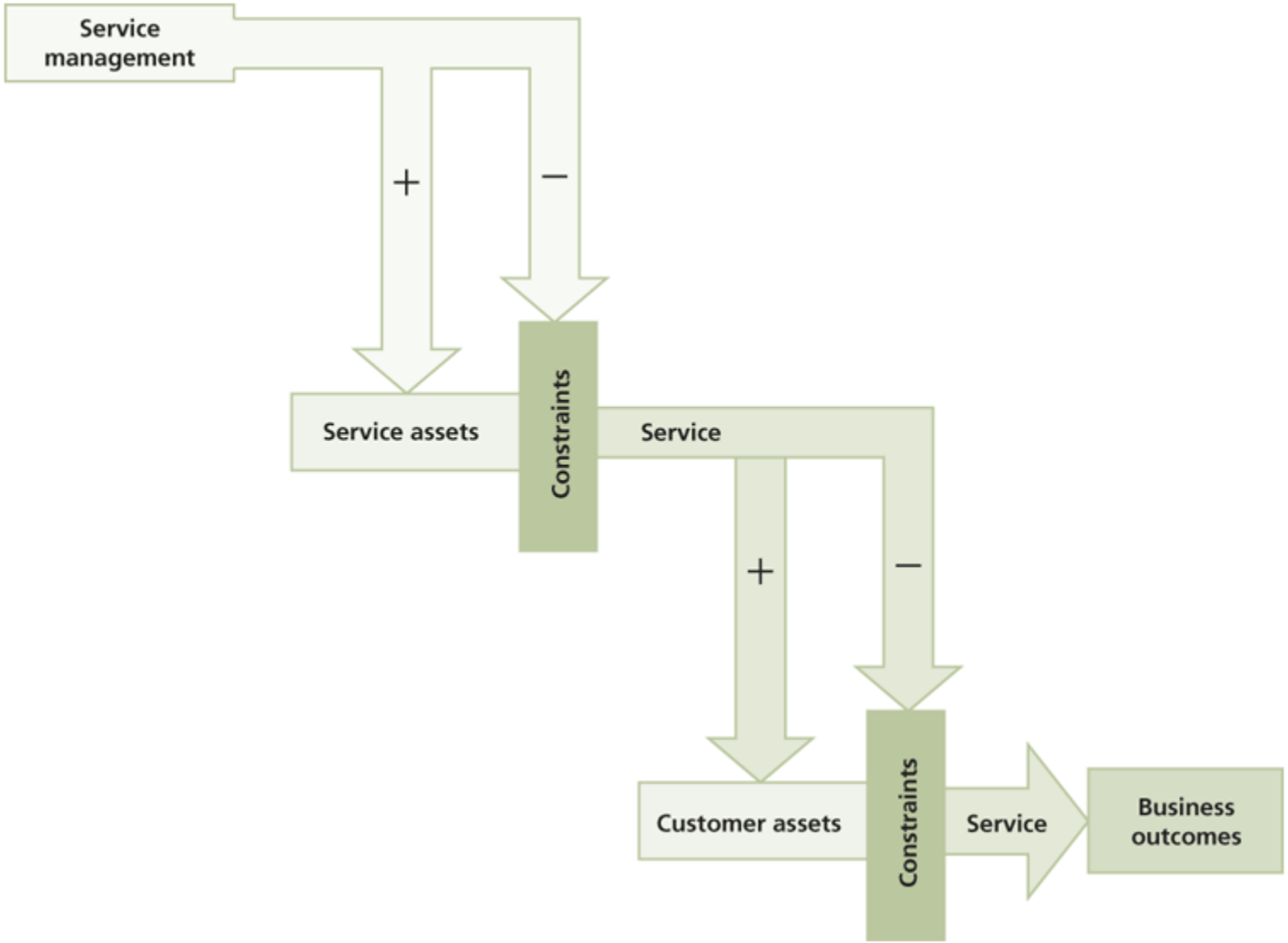
  – **Users** Those who use the service on a day-to-day basis. Users are distinct from customers, as some customers do not use the IT service directly.

  – **Suppliers** Third parties responsible for supplying goods or services that are required to deliver IT services. Examples of suppliers include commodity hardware and software vendors, network and telecom providers, and outsourcing organizations.

Service Management - Basic Concepts

- ***Asset*:** Any resource or capability.
- ***Customer asset***: Any resource or capability used by a customer to achieve a business outcome.
- ***Service asset***: Any resource or capability used by a service provider to deliver services to a customer.
- A **strategic asset** is any asset (customer or service) that provides the basis for core competence, distinctive performance or sustainable competitive advantage, or which qualifies a business unit to participate in business opportunities.

Service Management optimizes the performance of Service Assets



Service Management

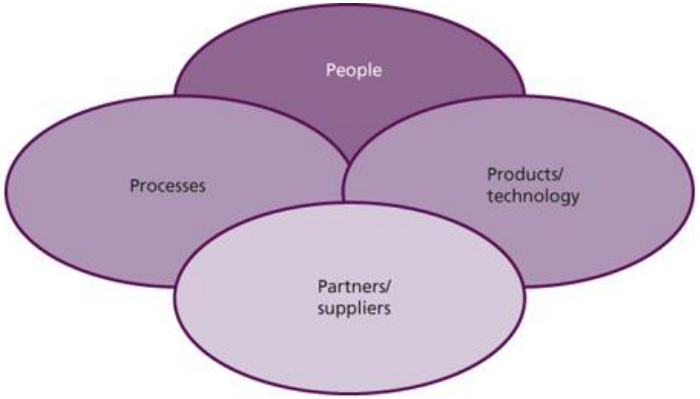
•**Service provider:** An organization supplying services to one or more internal or external customers.

–**Type I – internal service provider** An internal service provider that is embedded within a business unit. There may be several Type I service providers within an organization.

–**Type II – shared services unit** An internal service provider that provides shared IT services to more than one business unit.

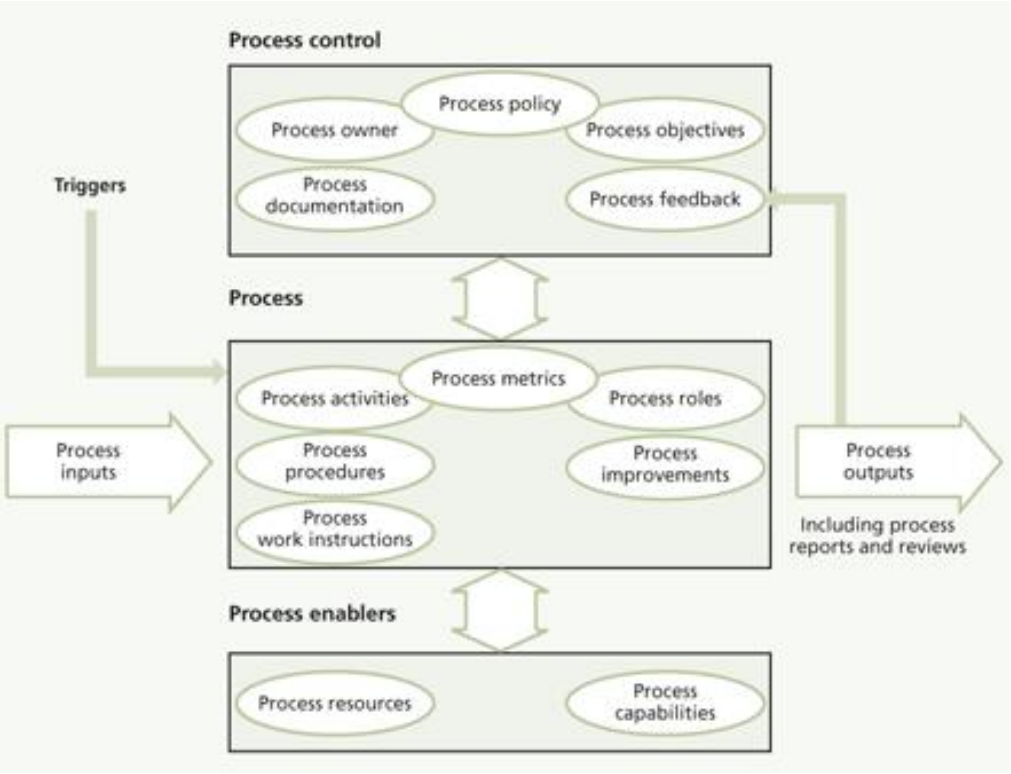
–**Type III – external service provider** A service provider that provides IT services to external customers.

•**Four P's of Service Management -**



Process

- A process is a structured set of activities designed to accomplish a specific *objective*. A process takes one or more defined inputs and turns them into defined outputs.
- Process Characteristics:
  - **Measurability**
  - **Specific results**
  - **Customers**
  - **Responsiveness to specific triggers**



Process Model

Functions and Roles

- **Functions :** A *function* is a team or group of people and the tools or other resources they use to carry out one or more processes or activities. It is a **“self contained units of organization”**

  – **Service Desk**

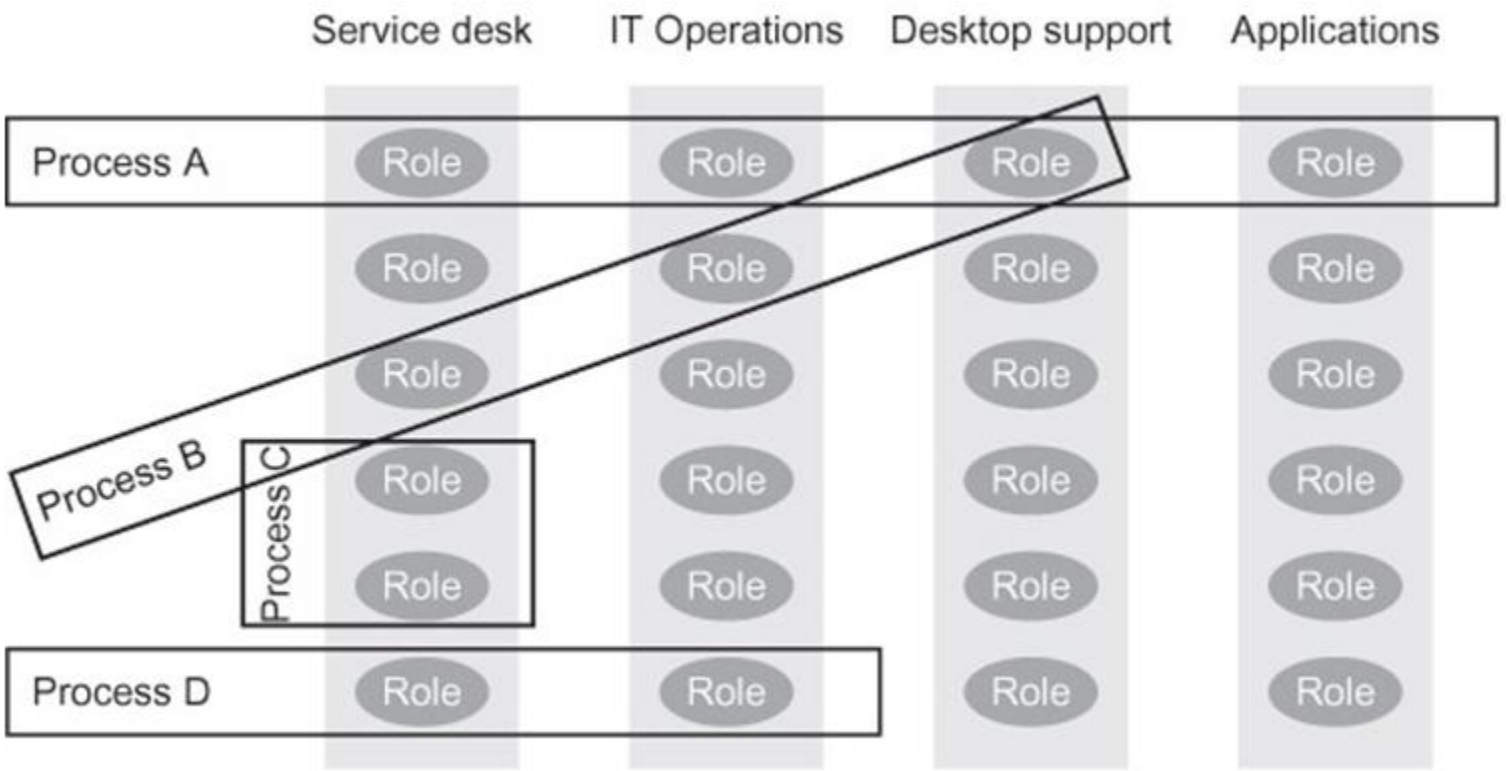
  – **Technical management**

  – **IT operations management**

  – **Application Management**

- **Role** A role is a set of responsibilities, activities and authorities granted to a person or team. A role is defined in a *process* or function. One person or team may have multiple roles – for example, the roles of configuration manager and change manager may be carried out by a single person.

Processes and Functions



Service owner

Service Owners provide focus for their Services. The Service Owner is responsible to the customer for the initiation, transition, and ongoing maintenance and support of a particular service. The Service Owner has the following responsibilities:

- Act as prime customer contact for all service related enquiries and issues
- Ensure that the ongoing service delivery and support meet agreed customer requirements
- Will identify opportunities for Service Improvements, discuss with the customer, and will raise the RFC (Request For Comments) for assessment if appropriate
- Will liaise with the appropriate Process Owners throughout the Service Management lifecycle
- Will solicit required data, statistics and reports for analysis and to facilitate effective service monitoring and performance

Process Owner

- **Process Owner** is responsible for ensuring that all activities defined within the process are undertaken. The Process Owner's responsibilities include:
- Define the process strategies and assist with process design
- Define appropriate policies and standards to be employed throughout the process
- Periodically audit the process to ensure compliance to policy and standards
- Communicate process information or changes as appropriate to ensure awareness
- Provision of process resources to support activities required throughout the Service management lifecycle
- Ensure process technicians have the required knowledge and the required technical and business understanding to deliver the process, and understand their role in the process
- Review opportunities for process enhancements and for improving the efficiency and effectiveness of the process

Process Manager

- The Process Manager role is accountable for operational management of a process
- There may be several process manager for a process
- Process manager role is often assigned to one person who carries out the process owner role, but two roles may be separate in larger organizations

Process Practitioner

- A process practitioner is responsible for carrying out one or more process activities
- The process practitioner's responsibilities typically include:
  - Carrying out one or more activities of a process
  - Working with other stakeholders such as managers, co-workers, customers and users to ensure their contributions are effective
  - Ensuring input, output and interfaces for their activities are correct
  - Creating and updating records to show that activities have been carried out correctly

RACI Model

- A RACI model can be used to help define roles and responsibilities
- It identifies the activities that must be performed alongside the various individuals and roles involved
- RACI is an acronym for the four main roles of:
  - **Responsible** – The person or people responsible for getting the job done
  - **Accountable** – Only one person can be accountable for each task
  - **Consulted** – The people who are consulted and whose opinions are sought
  - **Informed** – The people who are kept up-to-date on progress

Governance and Management system

- **Governance:**
  - Establish responsibilities
  - Strategy to set and meet the organization's *objectives*
  - Ensure *performance* when required
  - Ensure conformance with rules
  - Ensure respect for human factors.

- **Management system:** The framework of *policy*, *processes*, *functions*, standards, *guidelines* and tools that ensures an organization or part of an *organization* can achieve its objectives.

  Example:

  - A *quality management system* (*ISO 9001*)
  - An environmental management system (ISO 14000)
  - A service management system (*ISO/IEC 20000*)
  - An *information security management system* (ISO/IEC 27001)
  - A management system for *software asset management* (ISO/IEC 19770).

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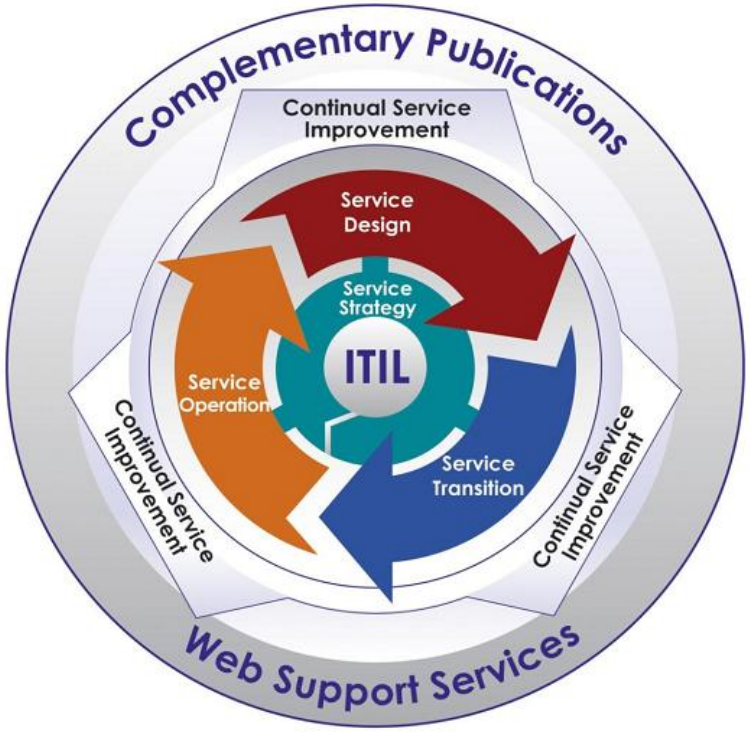
Module 2

The ITIL Service lifecycle

ITIL Core – Service lifecycle approach

- Service Strategy (SS) is the axis around which the lifecycle rotates.
- Service Design (SD), Service Transition (ST), and Service Operation (SO) implement strategy.
- Continual Service Improvement (CSI) identifies, prioritizes improvement programs and projects, based on strategic objectives



Service Strategy - Objectives

- A clear identification of the definition of services and the customers who use them
- The ability to define how value is created and delivered
- A means to identify opportunities to provide services and how to exploit them
- A clear service provision model, that articulates how services will be delivered and funded, and to whom they will be delivered and for what purpose
- The means to understand the organizational capability required to deliver the strategy

Service Design - Objectives

- The objective of service design is to design IT services so effectively that minimal improvement during their lifecycle will be required.

- Continual improvement should be embedded in all service design activities to ensure that the solutions and designs become even more effective over time, and to identify changing trends in the business that may offer improvement opportunities.

- Service design activities can be periodic or exception-based when they may be triggered by a specific business need or event.

Service Transition - Objectives

- Plan and manage service changes efficiently and effectively
- Manage risks relating to new, changed or retired services
- Successfully deploy service releases into supported environments
- Ensure that service changes create the expected business value
- Provide good-quality knowledge and information about services and service assets.

Service Operation - Objectives

- Maintain business satisfaction and confidence in IT through effective and efficient delivery and support of agreed IT services

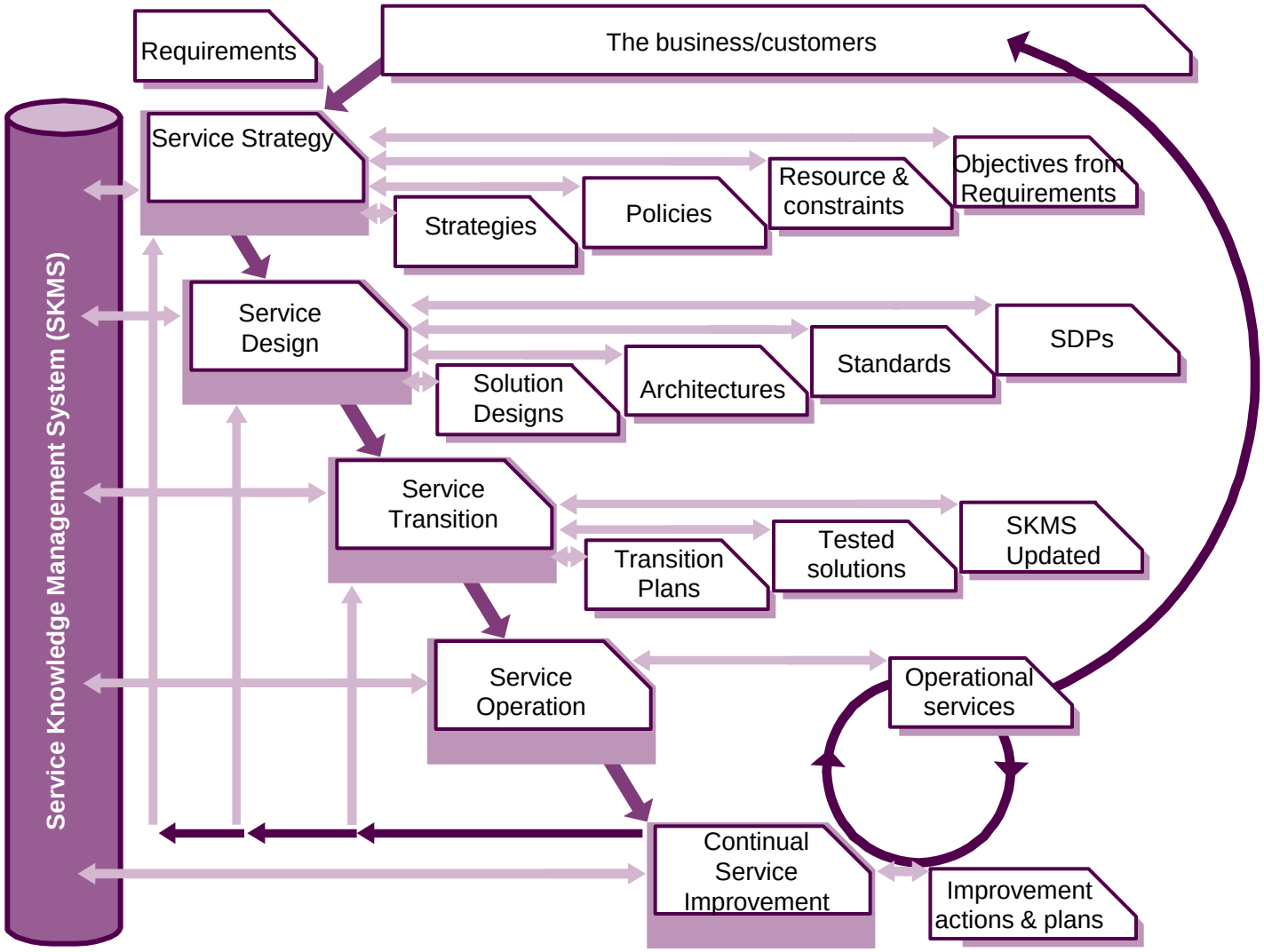
- Minimize the impact of service outages on day-to-day business activities

- Ensure that access to agreed IT services is only provided to those authorized to receive those services.

CSI - Objectives

- Review, analyze, prioritize and make recommendations on improvement opportunities in each lifecycle stage: service strategy, service design, service transition, service operation and CSI itself
- Review and analyze service level achievement
- Identify and implement specific activities to improve IT service quality and improve the efficiency and effectiveness of the enabling processes
- Improve cost effectiveness of delivering IT services without sacrificing customer satisfaction
- Ensure applicable quality management methods are used to support continual improvement activities
- Ensure that processes have clearly defined objectives and measurements that lead to actionable improvements
- Understand what to measure, why it is being measured and what the successful outcome should be.

Service Lifecycle – Inputs and outputs



Service lifecycle processes

Core ITIL lifecycle publication	Processes described in the publication
ITIL Service Strategy	Strategy management for IT services
	Service portfolio management
	Financial management for IT services
	Demand management
	Business relationship management
ITIL Service Design	Design coordination
	Service catalogue management
	Service level management
	Availability management
	Capacity management
	IT service continuity management
	Information security management
	Supplier management
ITIL Service Transition	Transition planning and support
	Change management
	Service asset and configuration management
	Release and deployment management
	Service validation and testing
	Change evaluation
	Knowledge management
ITIL Service Operation	Event management
	Incident management
	Request fulfilment
	Problem management
	Access management
ITIL Continual Service Improvement	Seven-step improvement process

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Module 3

Service Strategy

Service Strategy Processes

- Strategy Management for IT Services
- Service portfolio Management
- Finance Management
- Demand Management
- Business Relationship Management

Strategy Management for IT Services

- Process of defining and maintaining an organization's perspective, position, plans and patterns with regard to its services and the management of those services.

- Articulates how a service provider will enable an organization to achieve its business outcomes

- Establishes criteria and mechanisms to decide which services will be best suited to meet the business outcomes and the most effective and efficient way to manage these services.

- Process that ensures that the strategy is defined, maintained and achieves its purpose.

Objectives

- Analyze the internal and external environments in which the service provider exists, to identify opportunities that will benefit the organization.

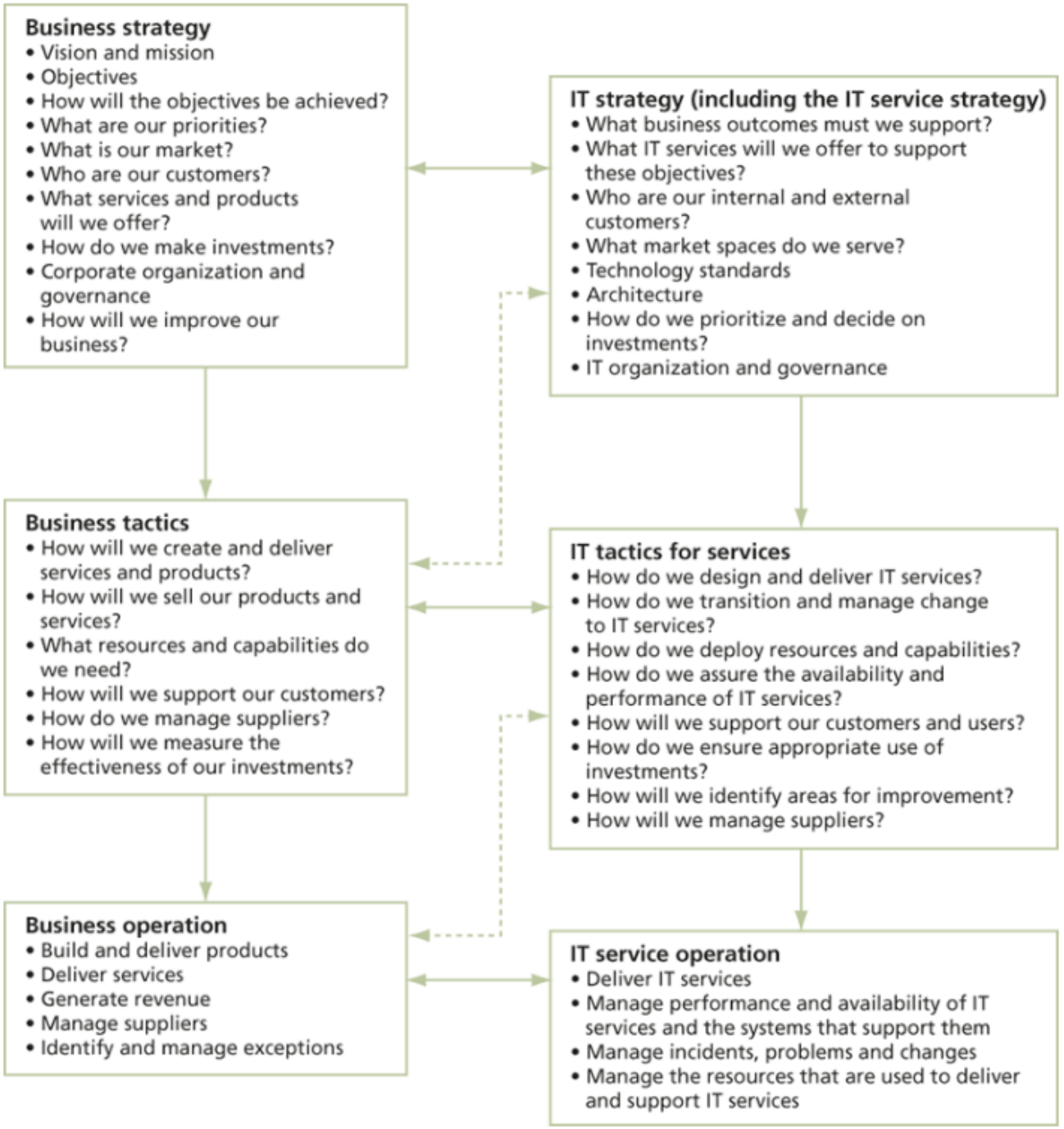
- Agree the service provider’s perspective and review regularly to ensure continued relevance.
-
- Establish the position of the service provider relative to its customers and other service providers..

- Produce and maintain strategy planning documents and ensure that all relevant stakeholders have updated copies of the appropriate documents.

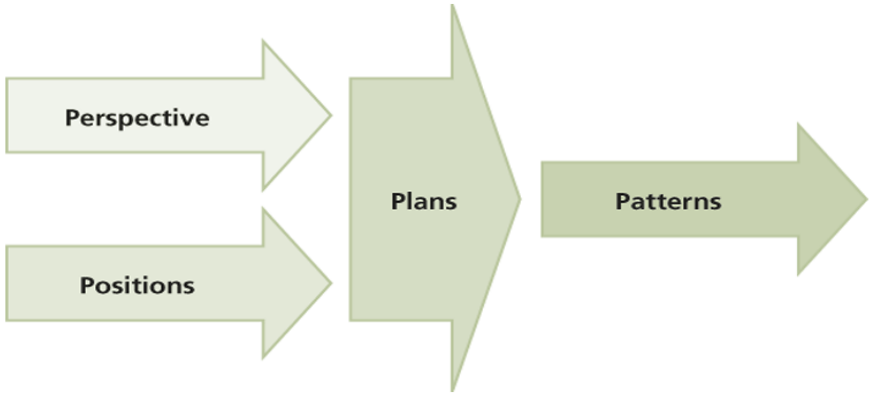
- Ensure that strategic plans have been translated into tactical and operational plans for each organizational unit that is expected to deliver on the strategy.

- Manage changes to the strategies and related documents, ensuring that strategies keep pace with changes to the internal and external environments.

Scope


Business strategy
• Vision and mission
• Objectives
• How will the objectives be achieved?
• What are our priorities?
• What is our market?
• Who are our customers?
• What services and products will we offer?
• How do we make investments?
• Corporate organization and governance
• How will we improve our business?
IT strategy (including the IT service strategy)
• What business outcomes must we support?
• What IT services will we offer to support these objectives?
• Who are our internal and external customers?
• What market spaces do we serve?
• Technology standards
• Architecture
• How do we prioritize and decide on investments?
• IT organization and governance
Business tactics
• How will we create and deliver services and products?
• How will we sell our products and services?
• What resources and capabilities do we need?
• How will we support our customers?
• How do we manage suppliers?
• How will we measure the effectiveness of our investments?
IT tactics for services
• How do we design and deliver IT services?
• How do we transition and manage change to IT services?
• How do we deploy resources and capabilities?
• How do we assure the availability and performance of IT services?
• How will we support our customers and users?
• How do we ensure appropriate use of investments?
• How will we identify areas for improvement?
• How will we manage suppliers?
Business operation
• Build and deliver products
• Deliver services
• Generate revenue
• Manage suppliers
• Identify and manage exceptions
IT service operation
• Deliver IT services
• Manage performance and availability of IT services and the systems that support them
• Manage incidents, problems and changes
• Manage the resources that are used to deliver and support IT services

4Ps of Service Strategy



Perspective Describes the *vision* and direction of the organization. A *strategic* perspective articulates what the business of the *organization* is, how it interacts with the *customer* and how its services or products will be provided.

Positions Describe how the service provider intends to compete against other *service providers* in the market. The position refers to the *attributes* and capabilities that the service provider has that sets them apart from their competitors.

Plans Describe how the service provider will *transition* from their current situation to their desired situation. Plans describe the activities that the service provider will need to take to be able to achieve their perspective and positions.

Patterns Describe the ongoing, repeatable actions that a service provider will have to perform in order to continue to meet its strategic objectives.

Service Sourcing Strategies

In Sourcing	•Internal resources will manage IT Services
Outsourcing	•External vendor manages the IT services
Co-Sourcing	•Mix of In-sourcing and Out sourcing.
Multi-sourcing or Partnership	•Strategic partnership between two organizations
Business process Outsourcing	•Popular model, re-locating entire Business process or functions
Application Service provision	•Cloud services. Applications are shared and charged on pay-by-use concept (Ex. SAAS).
Knowledge Process Outsourcing	•Outsourcing domain based processes or Business expertise. Service providers need to have advance analytical and specialized skills

Service Portfolio Management

- The service portfolio is the complete set of services that is managed by a service provider. The service portfolio is used to manage the entire lifecycle of all services. It includes three categories of service: service pipeline (proposed or in development), service catalogue (live or available for deployment) and retired services

- Service portfolio management is responsible for managing the service portfolio. It is therefore also the process that is responsible for defining which services will be entered into the service portfolio and how those services are tracked and progressed through their lifecycle.

- The purpose of service portfolio management is to ensure that the service provider has the right mix of services to balance the investment in IT with the ability to meet business outcomes

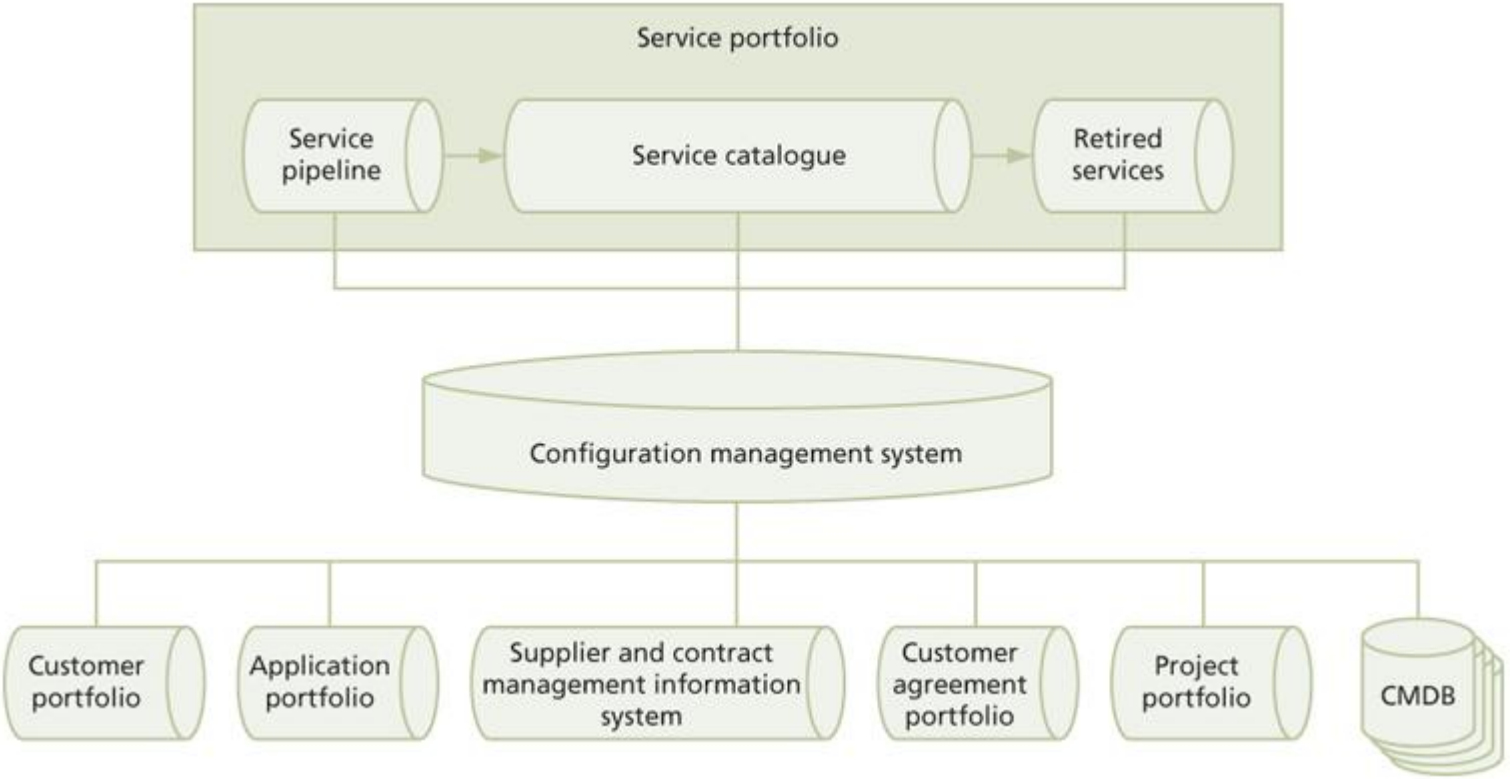
Objectives

- Provide a process and mechanisms to enable an organization to investigate and decide on which services to provide, based on an analysis of the potential return and acceptable level of risk
- Maintain the definitive portfolio of services provided
- Control which services are offered, under what conditions and at what level of investment
- Track the investment in services throughout their lifecycle, thus enabling the organization to evaluate its strategy, as well as its ability to execute against that strategy
- Analyze which services are no longer viable and when they should be retired.

Scope

- All services a service provider plans to deliver, those currently delivered and those that have been withdrawn from service.

Components of Service Portfolio



Financial Management

Process responsible for managing an IT Service Provider's Budgeting, Accounting and Charging Requirements

Objectives:

•Defining and maintaining a framework to identify, manage and communicate the cost of providing services.

•Evaluating the financial impact of new or changed strategies on the service provider.

•Securing funding to manage the provision of services.

•Executing the financial policies and practices in the provision of services.

•Accounting for money spent on the creation, delivery and support of services.

•Forecasting the financial requirements for the organization to be able to meet its service commitments to its customers, and compliance with regulatory and legislative requirements.

•Where appropriate, defining a framework to recover the costs of service provision from the customer.

Scope

- **Budgeting** This is the process of predicting and controlling the income and expenditure of money within the organization. Budgeting consists of a periodic negotiation cycle to set budgets (usually annual) and the monthly monitoring of the current budgets.
- **Accounting** This is the process that enables the IT organization to account fully for the way its money is spent (particularly the ability to identify costs by customer, by service and by activity). It usually involves accounting systems, including ledgers, charts of accounts, journals etc. and should be overseen by someone trained in accountancy.
- **Charging** This is the process required to bill customers for the services supplied to them. This requires sound IT accounting practices and systems.

Business Case

•A decision support and planning tool that projects the likely consequences of a business action

- •Business Objectives
- •Assumptions
- •Impacts
- •Risks and contingencies
- •Investment Recovery method

Demand Management

- The purpose of demand management is to understand, anticipate and influence customer demand for services and to work with capacity management to ensure the service provider has capacity to meet this demand.

- Demand management works at every stage of the lifecycle to ensure that services are designed, tested and delivered to support the achievement of business outcomes at the appropriate levels of activity.

Objectives

- Identify and analyze **patterns of business activity (PBA)** to understand the levels of demand that will be placed on a service

- Ensure that services are designed to meet the patterns of business activity and the ability to meet business outcomes

- Work with capacity management to ensure that adequate resources are available at the appropriate levels of capacity to meet the demand for services, thus maintaining a balance between the cost of service and the value that it achieves

- Anticipate and prevent or manage situations where demand for a service exceeds the capacity to deliver it

Scope

- Identifying and analyzing patterns of business activity associated with services
- Identifying user profiles and analyzing their service usage patterns
- Identifying, agreeing and implementing measures to influence demand together with capacity management.

Difference between Demand and Capacity management

	Demand management	Capacity management
Purpose	Identify, analyse and influence customer demand for services and the capacity to meet this demand	Ensure that current and future capacity requirements of services are provided cost-effectively, and that services are performing at the agreed level
Focus	Anticipating the demand for services based on user profiles and patterns of business activity, and identifying the means to influence that demand to achieve an optimal balance between investment and business outcome achievement	Understanding the current and future requirements for resources and capabilities and ensuring that these are designed, tested and managed to meet the demand on services
Major activities	Identifying patterns of business activity, user profiles and the resulting demand on services. Anticipating increases or decreases in demand, and identifying strategies for dealing with these. Influencing demand through incentives, penalties or differential charging	Producing a capacity plan to ensure the investment in the appropriate levels of capacity. Ensuring optimal use and performance of resources. Evaluating the impact of new or changed resources and capabilities on existing performance levels

Business Relationship Management

- Establish and maintain a business relationship between the service provider and the customer based on understanding the customer and their business needs.

- Identify customer needs and ensure that the service provider is able to meet these needs as business needs change over time and between circumstances.

- For *internal service provider*s business relationship management is typically executed between a senior representative from IT and senior managers from the business units.

- In *external service provider*s business relationship management is often executed by a separate and dedicated *function* of BRMs or *account manager*s – each one dedicated to a *customer*, or group of smaller customers.

Objectives

- Ensure that the service provider understands the customer's perspective of service, and is therefore able to prioritize its services and service assets appropriately
- Ensure high levels of customer satisfaction, indicating that the service provider is meeting the customer's requirements
- Identify changes to the customer environment that could potentially impact the type, level or utilization of services provided
- Identify technology trends that could potentially impact the type, level or utilization of services provided
- Mediate in cases where there are conflicting requirements for services from different business units
- Establish formal complaints and escalation processes for the customer.

Scope

- BRM focuses on understanding how services meet customer requirements. To achieve this, the process must focus on understanding and communicating:

- Business outcomes that the customer wants to achieve

- Services that are currently offered to the customer, and the way in which they are used by the customer

- The way in which services are currently offered including who is responsible for the services, what levels of service have been agreed, the quality of services delivered and any changes that are anticipated

- Technology trends that could impact current services and the customer, and the nature of the potential impact

- Levels of customer satisfaction, and what action plans have been put in place to deal with the causes of dissatisfaction

Difference between BRM and SLM

	Business relationship management	Service level management
Purpose	To establish and maintain a business relationship between the service provider and the customer based on understanding the customer and their business needs. To identify customer needs (utility and warranty) and ensure that the service provider is able to meet these needs.	To negotiate service level agreements (warranty terms) with customers and ensure that all service management processes, operational level agreements and underpinning contracts are appropriate for the agreed service level targets.
Focus	Strategic and tactical – the focus is on the overall relationship between the service provider and their customer, and which services the service provider will deliver to meet customer needs.	Tactical and operational – the focus is on reaching agreement on the level of service that will be delivered for new and existing services, and whether the service provider was able to meet those agreements.
Primary measure	Customer satisfaction, also an improvement in the customer's intention to better use and pay for the service. Another metric is whether customers are willing to recommend the service to other (potential) customers.	Achieving agreed levels of service (which leads to customer satisfaction).

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Module 4

Service Design

Purpose and Objectives

- The purpose of the service design stage of the lifecycle is to design IT services, together with the governing IT practices, processes and policies, to realize the service provider’s strategy.

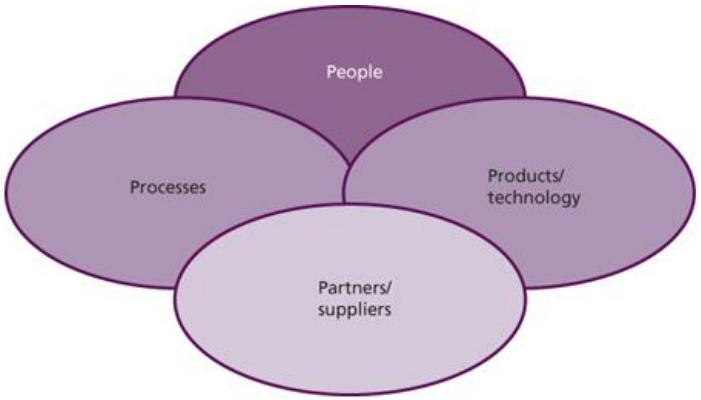
- The objective of service design is to design IT services so effectively that minimal improvement during their lifecycle will be required.

Value to Business

- Reduce total cost of ownership (TCO).
- Improve quality of service.
- Improve service performance
- Improve IT governance
- Improve effectiveness of service management and IT processes
- Improve information and decision-making
- Improve alignment with customer values and strategies.

Four P's of Service Design

- The implementation of ITIL Service Management as a practice is about preparing and planning the effective and efficient use of the Four Ps:
  - the People,
  - the Processes,
  - the Products (technology and tools) and
  - the Partners (suppliers, manufacturers and vendors)



Five aspects of Service Design

- Design of Service Solution for new or changed services
- Design of the Service Management systems and tools
- Design of the technology architecture
- Design of the processes required
- Design of measurements methods and metrics

Service Design Package

- Details all aspects of a Service through all stages of its lifecycle
- The SDP is passed from Service Design to Service Transition for implementation

Design Coordination

The purpose of the design coordination process is to ensure the goals and objectives of the service design stage are met by providing and maintaining a single point of coordination and control for all activities and processes within this stage of the service lifecycle.

Objectives

•Coordinate all design activities across projects, changes, suppliers and support teams, and manage schedules, resources and conflicts where required

•Plan and coordinate the resources and capabilities required to design new or changed services

•Produce service design packages (SDPs) based on service charters and change requests

•Manage the quality criteria, requirements and handover points between the service design stage and service strategy and service transition

•Ensure that all service models and service solution designs conform to strategic, architectural, governance and other corporate requirements

•Improve the effectiveness and efficiency of service design activities and processes

•Monitor and improve the performance of the service design lifecycle stage.

Scope

•Assisting and supporting each project or other change through all the service design activities and processes

•Maintaining policies, guidelines, standards, budgets, models, resources and capabilities for service design activities and processes

•Coordinating, prioritizing and scheduling of all service design resources to satisfy conflicting demands from all projects and changes

•Planning and forecasting the resources needed for the future demand for service design activities

•Reviewing, measuring and improving the performance of all service design activities and processes

•Ensuring that all requirements are appropriately addressed in service designs, particularly utility and warranty requirements

•Ensuring the production of service designs and/or SDPs and their handover to service transition.

Service Catalogue Management

Objectives

•Manage the information contained within the service catalogue

•Ensure that the service catalogue is accurate and reflects the current details, status, interfaces and dependencies of all services that are being run, or being prepared to run, in the live environment, according to the defined policies

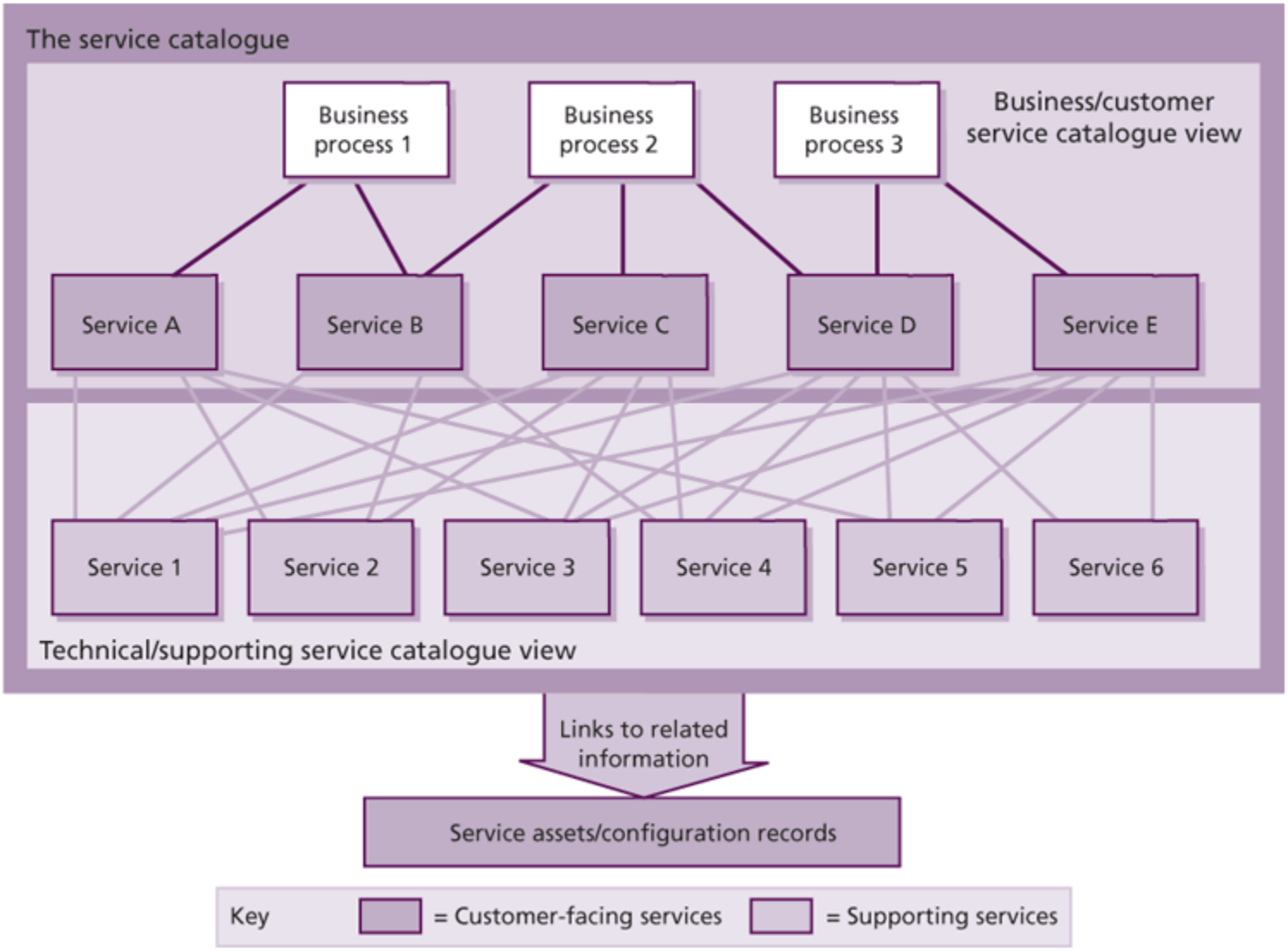
•Ensure that the service catalogue is made available to those approved to access it in a manner that supports their effective and efficient use of service catalogue information

•Ensure that the service catalogue supports the evolving needs of all other service management processes for service catalogue information, including all interface and dependency information.

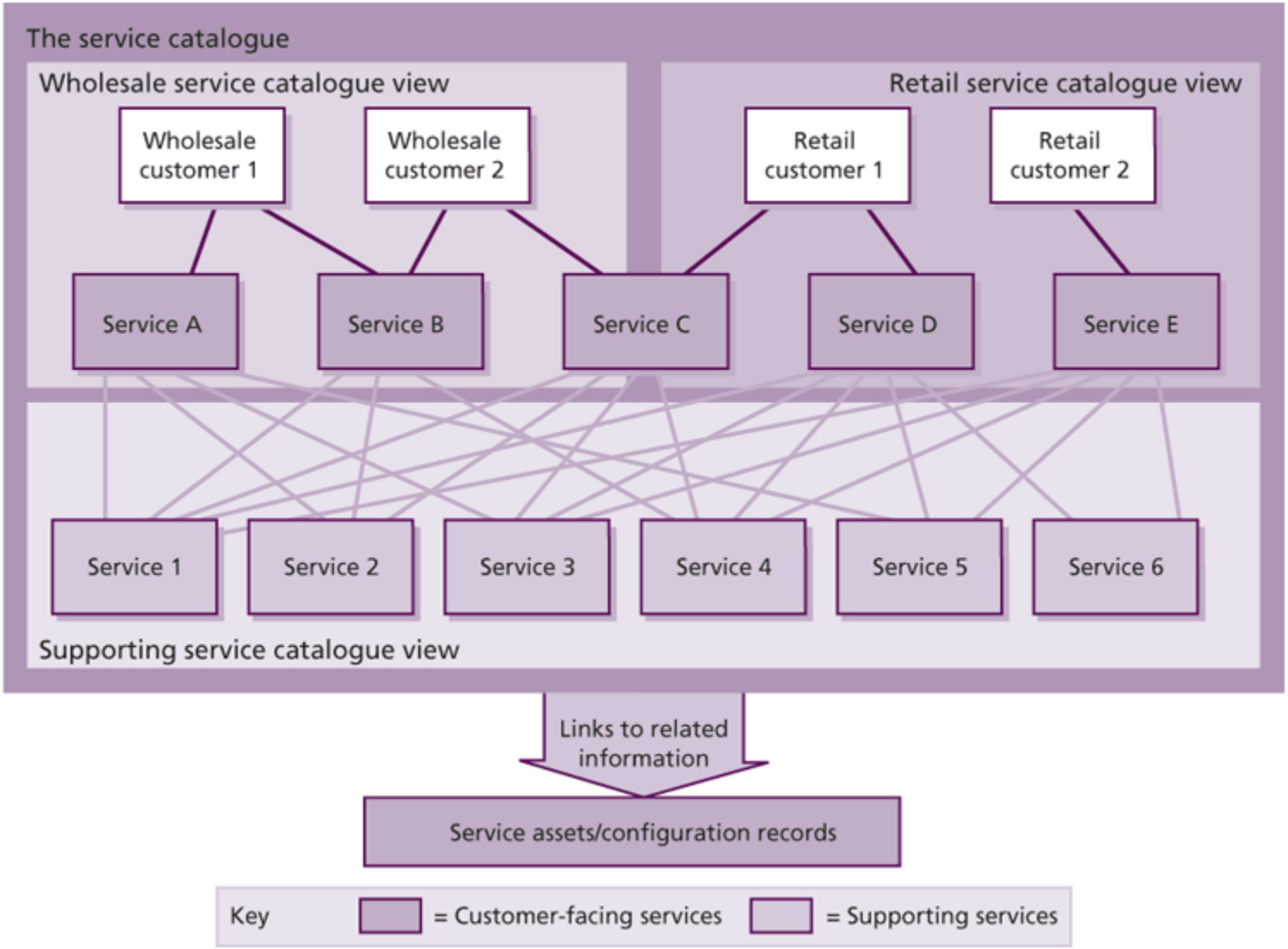
Scope

- Contribution to the definition of services and service packages
- Development and maintenance of service and service package descriptions appropriate for the service catalogue
- Production and maintenance of an accurate service catalogue
- Interfaces, dependencies and consistency between the service catalogue and the overall service portfolio
- Interfaces and dependencies between all services and supporting services within the service catalogue and the CMS
- Interfaces and dependencies between all services, and supporting components and configuration items (CIs) within the service catalogue and the CMS.

Service catalogue presentations – Two view



Service catalogue presentations – Three views



Service Level management

The purpose of the SLM process is to ensure that all current and planned IT services are delivered to agreed achievable targets.

Objectives

- Define, document, agree, monitor, measure, report and review the level of IT services provided and instigate corrective measures whenever appropriate
- Provide and improve the relationship and communication with the business and customers in conjunction with business relationship management
- Ensure that specific and measurable targets are developed for all IT services
- Monitor and improve customer satisfaction with the quality of service delivered
- Ensure that IT and the customers have a clear and unambiguous expectation of the level of service to be delivered
- Ensure that even when all agreed targets are met, the levels of service delivered are subject to proactive, cost-effective continual improvement.

SLM – Basic Concepts

- **Service Level Requirements (SLR)**
  - A Customer Requirement for an aspect of an IT Service
  - SLRs are based on Business Objectives and are used to negotiate and agree Service Level Targets
- **Service Level Agreement (SLA)**
  - An Agreement between an IT Service Provider and a Customer.
  - Describes the IT Service, documents Service Level Targets, and specifies the responsibilities of the IT Service Provider and the Customer
- **Operational Level Agreement (OLA)**
  - An Agreement between an IT Service Provider and another part (Department) of the same Organization
  - Supports the IT Service Provider’s delivery of IT Services to Customers
- **Underpinning Contract (UCs)**
  - An agreement between and IT service provider and External vendors/Suppliers.

SLA Framework

- Types of SLA
  - Service-based SLA
  - Customer-based SLA
  - Multi-level SLAs

- **Service-based SLA**
  - An SLA covers one service, for all the customers of that service
  - Example: an SLA may be established for an organization's e-mail service – covering all the customers of that service
- **Customer-based SLA**
  - An agreement with an individual customer group, covering all the services they use
  - Example: An SLA with an organization's finance department covering, say, the finance system, the accounting system, the payroll system, the billing system, the procurement system, and any other IT systems that they use

Multilevel SLA

- A Three Layer Structure
  - **Corporate level:** covering all the generic SLM issues appropriate to every customer throughout the organization.
  - **Customer level:** covering all SLM issues relevant to the particular customer group or business unit, regardless of the service being used
  - **Service level**: covering all SLM issues relevant to the specific service, in relation to a specific customer group (one for each service covered by the SLA).

Service levels - Review

- **Service Review**
  - Periodic review meetings with customers to review the service achievement in the last period
  - To preview any issues for the coming period. It is normal to hold such meetings monthly or, as a minimum, quarterly.

- **Service Improvement Plan (SIP)**
  - A formal Plan to implement improvements to a Process or IT Service.
  - SLM process is one of the triggers for a service improvement plan (SIP) as part of CSI and can be the result of the service review activity
  - A SIP is managed as part of the Continual Service Improvement process.

SLAM Chart Example

SLM process activities

- Design SLA frameworks
- Determine the Service Level Requirements (SLRs)
  - Agree and document SLAs
  - Negotiate and document Operational Level Agreements (OLAs) and the Underpinning Contracts (UCs)
- Monitor service performance against SLA
- Measure and improve customer satisfaction
- Produce service reports
- Conduct service reviews and instigate service improvements
- Review and revise SLAs and OLAs
- Maintain relationship with the Customer
- Manage complaints and compliments

Availability Management

The purpose of the availability management process is to ensure that the level of availability delivered in all IT services meets service level targets in a cost-effective and timely manner.

Objectives

- Produce and maintain an appropriate and up-to-date availability plan that reflects the current and future needs of the business
- Provide advice and guidance to all other areas of the business and IT on all availability-related issues
- Ensure that service availability achievements meet all their agreed targets by managing services and resources-related availability performance
- Assist with the diagnosis and resolution of availability-related incidents and problems
- Assess the impact of all changes on the availability plan and the availability of all services and resources
- Ensure that proactive measures to improve the availability of services are implemented wherever it is cost-justifiable to do so.

Scope

- **Reactive activities** These involve the monitoring, measuring, analysis and management of all events, incidents and problems involving unavailability. These activities are principally performed as part of the operational roles.[

- **Proactive activities** These involve the proactive planning, design and improvement of availability. These activities are principally performed as part of the design and planning roles.

- **Service availability** This involves all aspects of service availability and unavailability and the *impact* of component availability, or the potential impact of component unavailability on service availability.
-
- **Component availability** This involves all aspects of component availability and unavailability.

Aspects of Availability

Availability
Availability is the ability of a service, component or CI to perform its agreed function when required. It is often measured and reported as a percentage.

Reliability
Reliability is a measure of how long a service, component or CI can perform its agreed function without interruption.

It is often measured and reported as the mean time between service incidents (MTBSI) or mean time between failures (MTBF)

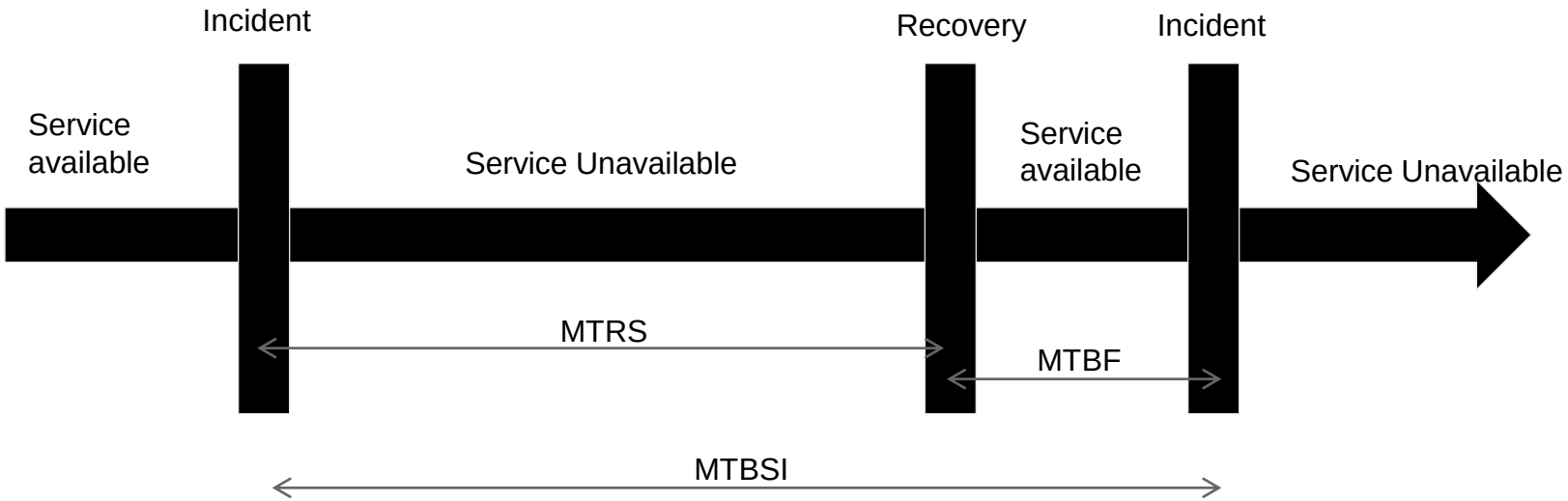
Maintainability
Maintainability is a measure of how quickly and effectively a service, component or CI can be restored to normal working after a failure

Serviceability
Serviceability is the ability of a third-party supplier to meet the terms of its contract.

Vital Business Function
Critical function among other functions – Should be given highest priority.

Availability Measures

- Mean time to restore a service – MTRS (Downtime)
- Mean time Between Failures – MTBF (Reliability)
  - Recovery of a service after a failure and the occurrence of the next incident
- Mean time Between System Incidents – MTBSI (Reliability)
  - Average time between two consecutive service disruptions.



Availability and Reliability measures

- Availability (%) = $\frac{\text{(Agreed Service Time (AST) – Downtime)}}{\text{Agreed Service Time (AST)}} \times 100\%$

- Reliability (MTBSI in Hrs) = $\frac{\text{Agreed Service Time in Hrs}}{\text{Number of Breaks}}$

- Reliability (MTBF in Hrs) = $\frac{\text{Agreed Service Time - Total Down time}}{\text{Number of Breaks}}$

Capacity Management

The purpose of the capacity management process is to ensure that the capacity of IT services and the IT infrastructure meets the agreed capacity- and performance-related requirements in a cost-effective and timely manner.

Objectives

•Produce and maintain an appropriate and up-to-date capacity plan, which reflects the current and future needs of the business

•Provide advice and guidance to all other areas of the business and IT on all capacity- and performance-related issues

•Ensure that service performance achievements meet all of their agreed targets by managing the performance and capacity of both services and resources

•Assess the impact of all changes on the capacity plan, and the performance and capacity of all services and resources

•Ensure that proactive measures to improve the performance of services are implemented wherever it is cost-justifiable to do so.

Balancing Act

Capacity management is essentially a balancing act:

- **Balancing costs against resources needed** The need to ensure that processing capacity that is purchased is cost-justifiable in terms of business need, and the need to make the most efficient use of those resources.

- **Balancing supply against demand** The need to ensure that the available supply of IT processing power matches the demands made on it by the business, both now and in the future. It may also be necessary to manage or influence the demand for a particular resource.

Sub Processes

Business capacity management

The business capacity management sub-process translates business needs and plans into requirements for service and IT infrastructure, ensuring that the future business requirements for IT services are quantified, designed, planned and implemented in a timely fashion.

Service capacity management

The service capacity management sub-process focuses on the management, control and prediction of the end-to-end performance and capacity of the live, operational IT services usage and workloads.

Component capacity management

The component capacity management sub-process focuses on the management, control and prediction of the performance, utilization and capacity of individual IT technology components

Capacity Plan

- This is used by all areas of the business and IT management, and is acted on by the IT service provider and senior management of the organization to plan the capacity of the IT infrastructure.

- It also provides planning input to many other areas of IT and the business. It contains information on the current usage of service and components, and plans for the development of IT capacity to meet the needs in the growth of both existing service and any agreed new services.

- The capacity plan should be actively used as a basis for decision-making. Too often, capacity plans are created and never referred to or used.

IT Service Continuity Management

The purpose of the IT service continuity management process is to support the overall business continuity management (BCM) process by managing the risks that could seriously affect IT Services.

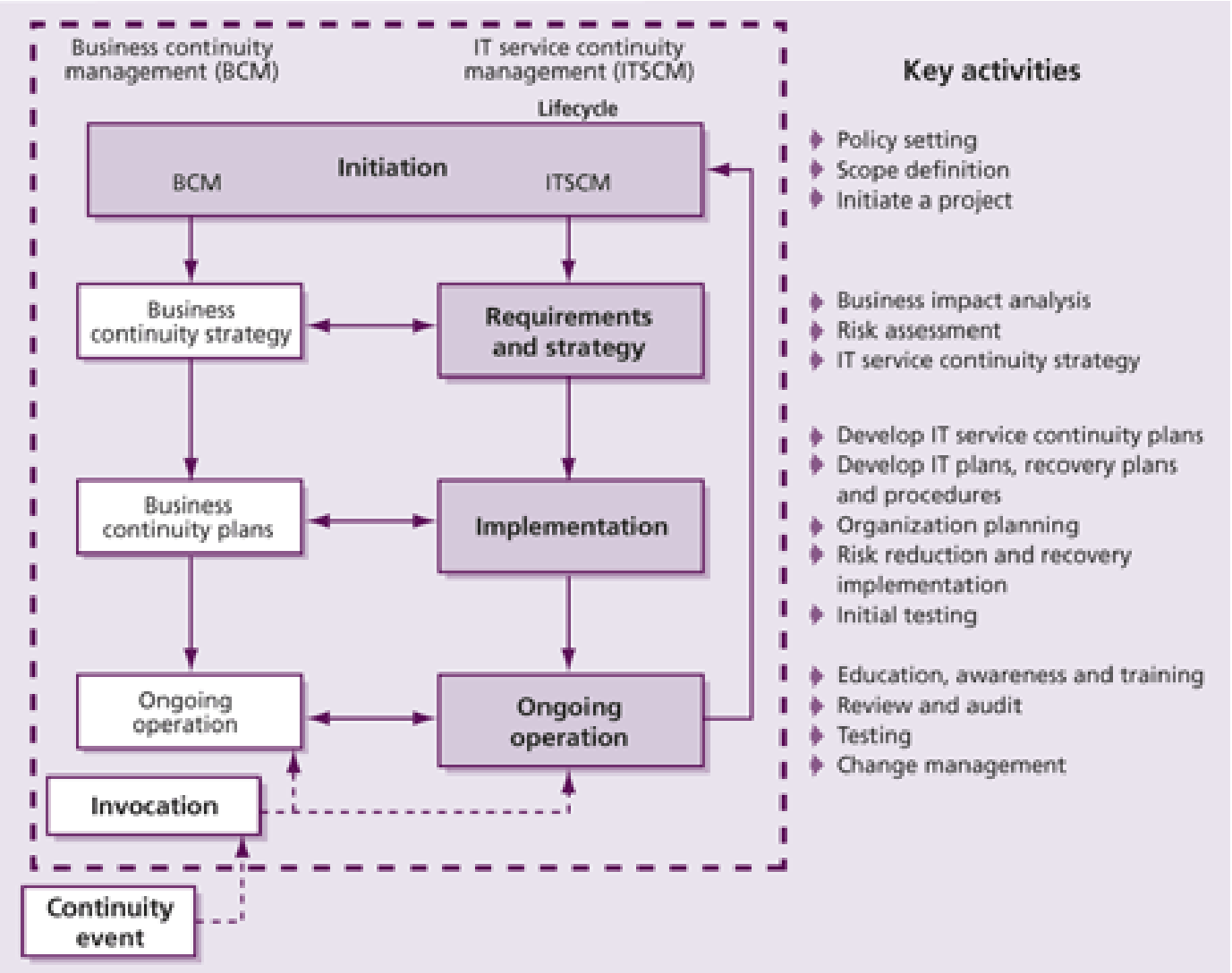
Objectives

- Produce and maintain a set of IT service continuity plans that support the overall business continuity plans of the organization
- Complete regular BIA exercises to ensure that all continuity plans are maintained in line with changing business impacts and requirements
- Conduct regular risk assessment and management exercises to manage IT services within an agreed level of business risk in conjunction with the business and the availability management and information security management processes
- Assess the impact of all changes on the IT service continuity plans and supporting methods and procedures
- Negotiate and agree contracts with suppliers for the provision of the necessary recovery capability to support all continuity plans in conjunction with the supplier management process.

Scope

- BIA to quantify the impact loss of IT service would have on the business
- Risk assessment and management – the risk identification and risk assessment to identify potential threats to continuity and the likelihood of the threats becoming reality. This also includes taking measures to manage the identified threats where this can be cost-justified.
- Production of an overall ITSCM strategy that must be integrated into the BCM strategy.
- Production of an ITSCM plan, which again must be integrated with the overall BCM plans
- Testing of the plans
- Ongoing operation and maintenance of the plans

ITSCM process activities



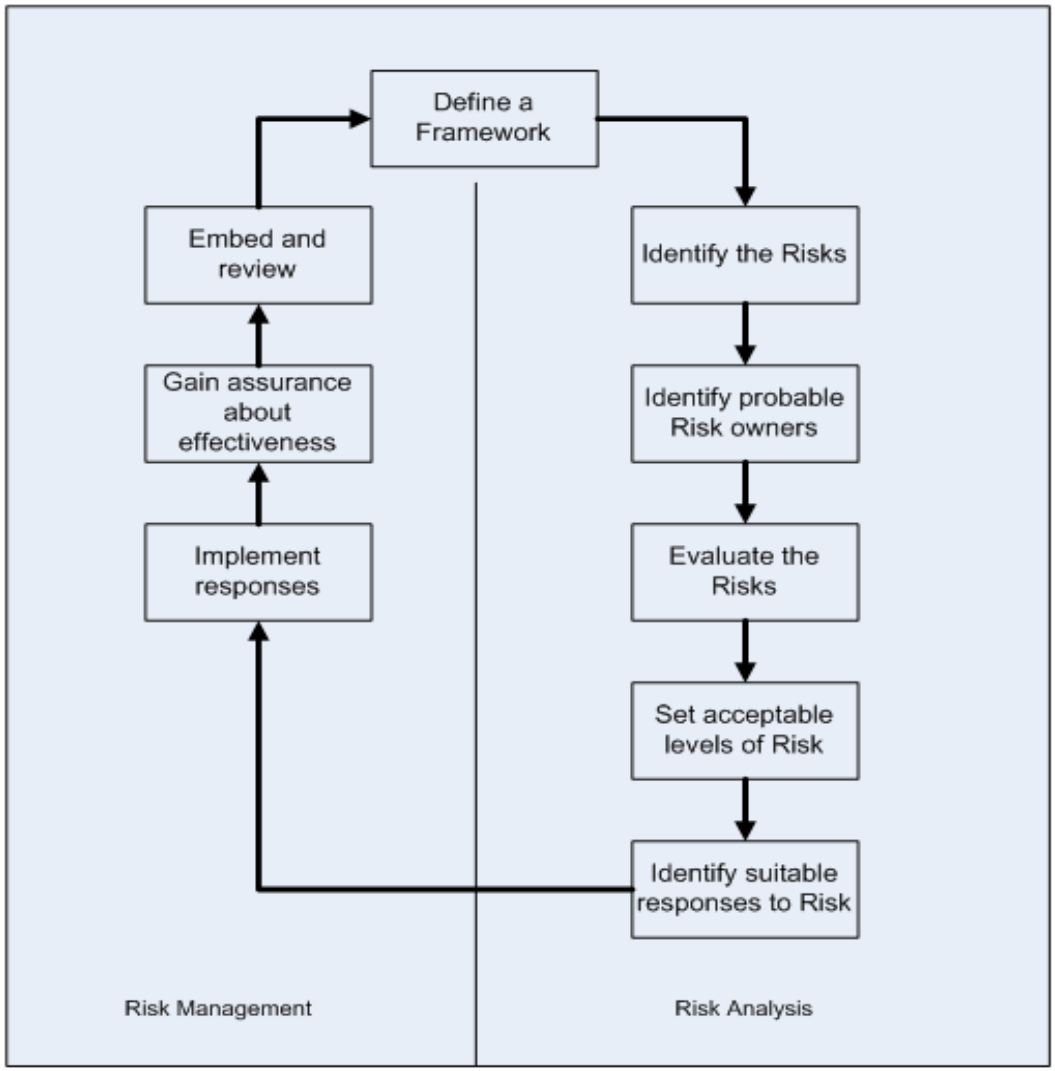
Business Impact Analysis (BIA)

- Activity in Business Continuity Management
- Identifies Vital Business Functions and their dependencies
- Dependencies may include Suppliers, people, other Business Processes, IT Services, etc.
- Defines the recovery requirements for IT Services such as
  - Recovery Time Objectives
  - Recovery Point Objectives
  - Minimum Service level targets for each IT Service

Recovery Strategies

- Manual Work Around
- Reciprocal Agreement
- Gradual Recovery (Cold Site)
- Intermediate Recovery (Warm Site)
- Fast Recovery (Hot standby)
- Immediate Recovery (Site Mirroring)
- Do nothing

Risk Analysis



IT Security management

The purpose of the information security management process is to align IT security with business security and ensure that the confidentiality, integrity and availability of the organization's assets, information, data and IT services always matches the agreed needs of the business.

For most organizations, the security objective is met when:

- Information is observed by or disclosed to only those who have a right to know **(confidentiality)**
- Information is complete, accurate and protected against unauthorized modification **(integrity)**
- Information is available and usable when required, and the systems that provide it can appropriately resist attacks and recover from or prevent failures **(availability)**
- Business transactions, as well as information exchanges between enterprises, or with partners, can be trusted (authenticity and non-repudiation).

Scope

- Business security policy and plans
- Current business operation and its security requirements
- Future business plans and requirements
- Legislative and regulatory requirements
- Obligations and responsibilities with regard to security contained within SLAs
- The business and IT risks and their management.

Information Security Policies

- Information security management activities should be focused on and driven by an overall *information security policy* and a set of underpinning specific *security* policies.
- An overall information security policy
- Use and misuse of IT *asset*s policy
- An access control policy
- A password control policy
- An email policy
- An internet policy
- An anti-virus policy
- An information *classification* policy
- A *document* classification policy
- A remote access policy
- A policy with regard to *supplier* access to *IT service*, information and *component*s
- An asset disposal policy
- A *record*s retention policy.

Information Security management system (ISMS)

ISMS consist of:

- An information security policy and specific security policies that address each aspect of strategy, controls and regulation
- A security management information system (SMIS), containing the standards, management procedures and guidelines supporting the information security policies
- A comprehensive security strategy, closely linked to the business objectives, strategies and plans
- An effective security organizational structure
- A set of security controls to support the policy
- The management of security risks
- Monitoring processes to ensure compliance and provide feedback on effectiveness
- Communications strategy and plan for security
- Training and awareness strategy and plan.

Supplier Management

The purpose of the supplier management process is to obtain value for money from suppliers and to provide quality of IT service to the business by ensuring that all contracts and agreements with suppliers support the needs of the business and that all suppliers meet their contractual commitments.

The main objectives of the supplier management process are to:

- Obtain value for money from suppliers and contracts
- Ensure that contracts with suppliers are aligned to business needs, and support and align with agreed targets in SLRs and SLAs, in conjunction with SLM
- Manage relationships with suppliers
- Manage supplier performance
- Negotiate and agree contracts with suppliers and manage them through their lifecycle
- Maintain a supplier policy and a supporting supplier and contract management information system (SCMIS).

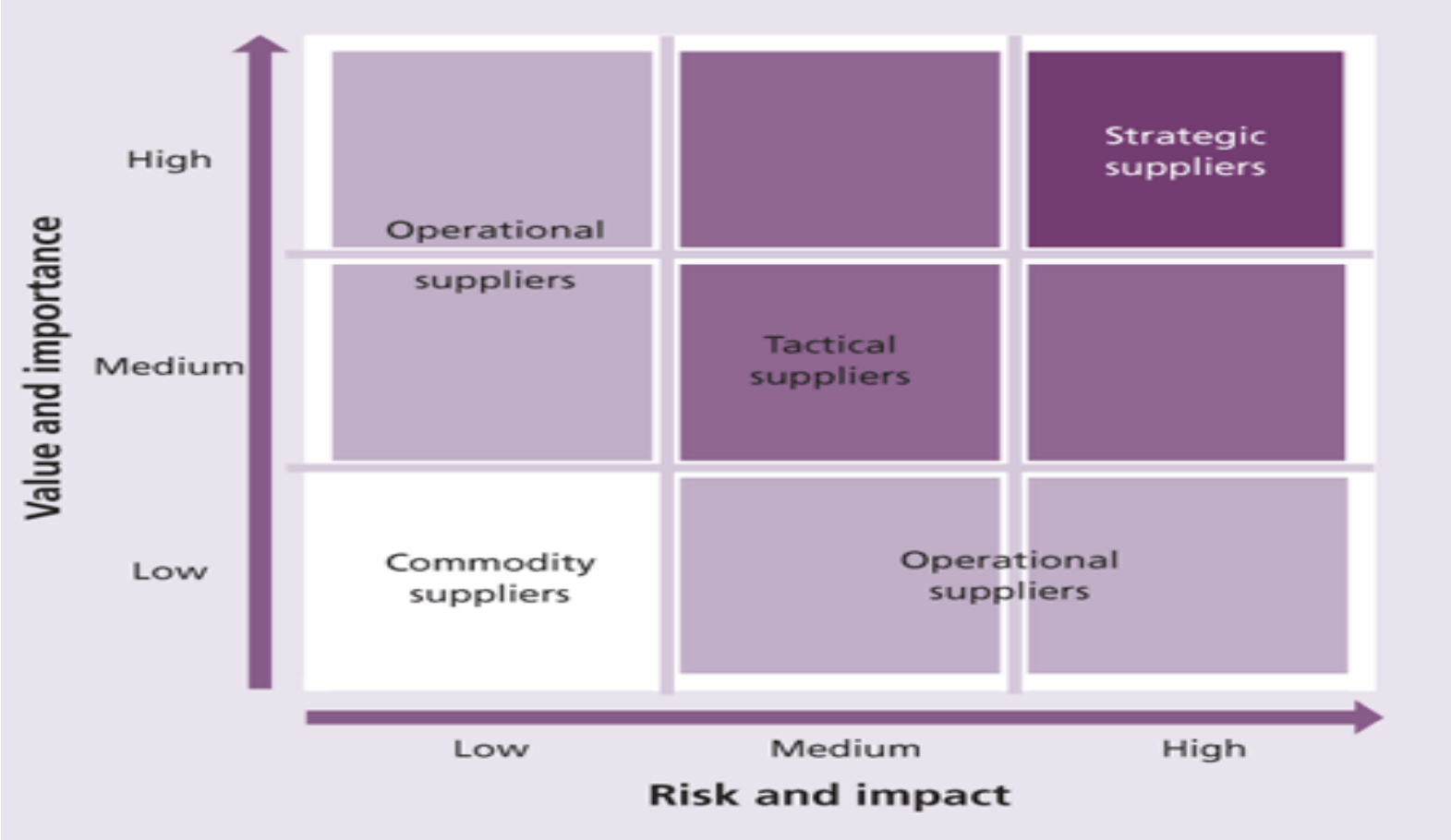
Suppliers and UCs

- **Suppliers:**
  - A Third Party responsible for supplying goods or Services that are required to deliver IT services
- **Underpinning Contracts**
  - Contract between an IT Service Provider and a Third Party.
  - Contains information such as
    - Scope of services to be provided
    - Service performance requirements
    - Contact points, communication and reporting frequency and content
    - Contract review and dispute resolution processes
    - Price structure and Payment terms
    - Confidentiality and announcements
    - Termination rights of each party

SCMIS

- Definition of new supplier and contract requirements
- Evaluation and set up of new suppliers and contracts
- Supplier categorization and maintenance of the SCMIS
- Establishing new suppliers
- Management of suppliers and their performance and of the associated contracts
- Contract renewal or termination.

Supplier categorization



Supplier Categorization

- **Strategic** For significant ‘partnering’ relationships that involve senior managers sharing confidential strategic information to facilitate long-term plans. (e.g. a network service provider supplying worldwide networks service and their support).
- **Tactical** For relationships involving significant commercial activity and business interaction. These relationships would normally be managed by middle management and would involve regular contact and performance reviews, often including ongoing improvement programmes (e.g. a hardware maintenance organization providing resolution of server hardware failures).
- **Operational** For suppliers of operational products or services. These relationships would normally be managed by junior operational management and would involve infrequent but regular contact and performance reviews (e.g. an internet hosting service provider, supplying hosting space for a low-usage, low-impact website or internally used IT service).
- **Commodity** For suppliers providing low-value and/or readily available products and services, which could be alternatively sourced relatively easily (e.g. paper or printer cartridge suppliers).

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Module 5

Service Transition

Transition Planning and Support

The purpose of the transition planning and support process is to provide overall planning for Service transitions and to coordinate the resources that they require.

Objectives

- Plan and coordinate the resources to ensure that the requirements of service strategy encoded in service design are effectively realized in service operation.
- Coordinate activities across projects, suppliers and service teams where required.
- Establish new or modified management information systems and tools, technology and management architectures, service management processes, and measurement methods and metrics to meet requirements established during the service design stage of the lifecycle.
- Ensure that all parties adopt the common framework of standard re-usable processes and supporting systems in order to improve the effectiveness and efficiency of the integrated planning and coordination activities.
- Provide clear and comprehensive plans that enable customer and business change projects to align their activities with the service transition plans.
- Monitor and improve the performance of the service transition lifecycle stage.

Scope

- Maintaining policies, standards and models for service transition activities and processes
- Guiding each major change or new service through all the service transition processes
- Coordinating the efforts needed to enable multiple transitions to be managed at the same time
- Prioritizing conflicting requirements for service transition resources
- Planning the budget and resources needed to fulfil future requirements for service transition
- Reviewing and improving the performance of transition planning and support activities
- Ensuring that service transition is coordinated with programme and project management, service design and service development activities.

Change Management

The purpose of the change management process is to control the lifecycle of all changes, enabling beneficial changes to be made with minimum disruption to IT services.

The objectives of change management are to:

•Respond to the customer's changing business requirements while maximizing value and reducing incidents, disruption and re-work.

•Respond to the business and IT requests for change that will align the services with the business needs.

•Ensure that changes are recorded and evaluated, and that authorized changes are prioritized, planned, tested, implemented, documented and reviewed in a controlled manner.

•Ensure that all changes to configuration items are recorded in the configuration management system.

Types of Change request

•**Standard change** A pre-authorized change that is low risk, relatively common and follows a procedure or work instruction.

•**Emergency change** A change that must be implemented as soon as possible, for example to resolve a major incident or implement a security patch.

•**Normal change** Any service change that is not a standard change or an emergency change.

RFC and Change record

•**RFC A request for change** – a formal proposal for a change to be made. It includes details of the proposed change, and may be recorded on paper or electronically. The term RFC is often misused to mean a change record, or the change itself.

•**Change record** A record containing the details of a change. Each change record documents the lifecycle of a single change. A change record is created for every request for change that is received, even those that are subsequently rejected. Change records should reference the configuration items that are affected by the change. Change records may be stored in the configuration management system or elsewhere in the service knowledge management system.

- **Change Schedules** – (or sometimes called as Forward Schedule of Changes (FSC))
  - A document that lists all approved changes and their planned implementation dates.
- **Change Windows**
  - A regular, agreed time when changes or releases may be implemented with minimal impact on services.
- **Projected Service Outage (PSO)**
  - A document containing details of the changes to agreed SLAs and Service availability because of change schedules(CS) in addition to planned downtime.

Change Proposals

- A change proposal is used to communicate a high-level description of the change. This change proposal is normally created by the service portfolio management process and is passed to change management for authorization.

Change management roles

- **Change Advisory Board (CAB)**
  - A group of people that advises the Change Manager in the Assessment, prioritization and scheduling of Changes
  - Usually members are chosen from all areas within the IT Service Provider, representatives from the Business and Third Parties such as Suppliers.
- **Emergency CAB (ECAB)**
  - A sub-set of the Change Advisory Board
  - Makes decisions about high-impact Emergency Changes
  - Membership of the ECAB may be decided at the time a meeting is called and depends on the nature of the Emergency Change

The 7 Rs of Change management

- Who raised the change?
- What is the reason for the change?
- What is the return required from the change?
- What are the risks involved in the change?
- What resources are required to deliver the change?
- Who is responsible for the build, test and implementation of the change?
- What is the relationship between this change and other changes?

Change Review or PIR

- A change review, e.g. post-implementation review (PIR), should be carried out to confirm that the change has met its objectives, that the initiator and stakeholders are happy with the results and that there have been no unexpected side-effects.

Remediation Planning

- Remediation - Recovery to a known state after a failed Change or Release
- Required where changes are not reversible
- If Change failure impact is severe, may require invoking business continuity plan.
- Contains the activities to restore the services or reduce the impact of Change failure

Service Asset and Configuration Management

The purpose of the SACM process is to ensure that the assets required to deliver services are properly controlled,
and that accurate and reliable information about those assets is available when and where it is needed.

Objectives

- Ensure that assets under the control of the IT organization are identified, controlled and properly cared for throughout their lifecycle.
- Identify, control, record, report, audit and verify services and other configuration items (CIs), including versions, baselines, constituent components, their attributes and relationships.
- Account for, manage and protect the integrity of CIs through the service lifecycle by working with change management to ensure that only authorized components are used and only authorized changes are made.
- Ensure the integrity of CIs and configurations required to control the services by establishing and maintaining an accurate and complete configuration management system (CMS).
- Maintain accurate configuration information on the historical, planned and current state of services and other CIs.
- Support efficient and effective service management processes by providing accurate configuration information to enable people to make decisions at the right time.

Basic Concepts

•A **service asset** is any resource or capability that could contribute to the delivery of a service.

•A **configuration item (CI)** is a service asset that needs to be managed in order to deliver an IT service. All CIs are service assets, but many service assets are not configuration items.

•A **configuration record** is a set of attributes and relationships about a CI. Configuration records are stored in a configuration management database (CMDB) and managed with a configuration management system (CMS). It is important to note that CIs are not stored in a CMDB; configuration records describe CIs that are stored in the CMDB.

•The **service knowledge management system (SKMS)** is a set of tools and databases that are used to manage knowledge, information and data. Many configuration items are available in the form of knowledge or information, and these are typically stored in the SKMS

Configuration Item

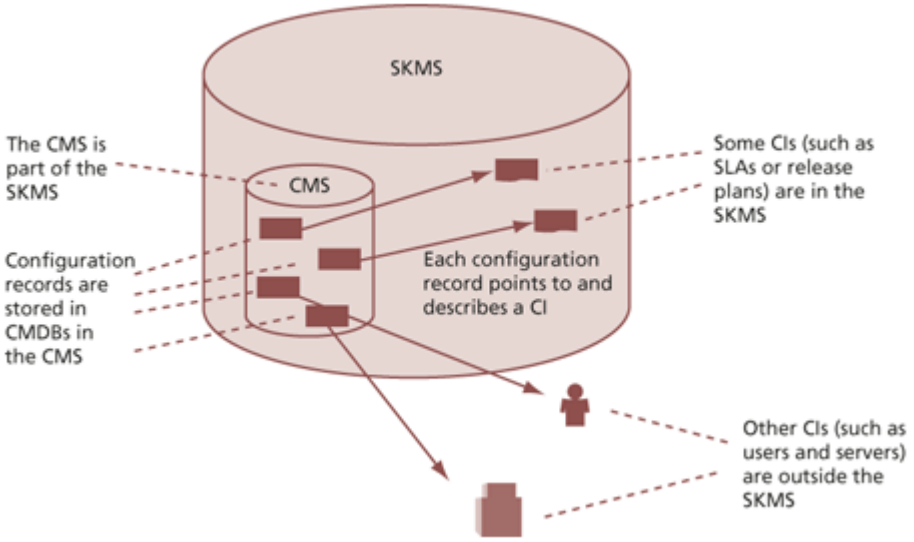
A CI has .a Category .Relationships, .Attributes .and Status

Service Lifecycle CIs	Service CIs	Organization CIs	Internal CIs	External CIs	Interface CIs
• Service Management Plans • SDP • Test Plans etc	• Processes, People • Infrastructure • Financial Capital • Applications etc	• Organization Business Strategy	• Data centre • Software	• Customer requirements • External Services	• Required to deliver end to end service

CI Attributes .Unique Identifier .Name/Description .CI Type .Version .Location

Configuration Management System (CMS)

- To manage large and complex IT services and infrastructures, service asset and configuration management requires the use of a supporting system known as the configuration management system (CMS).

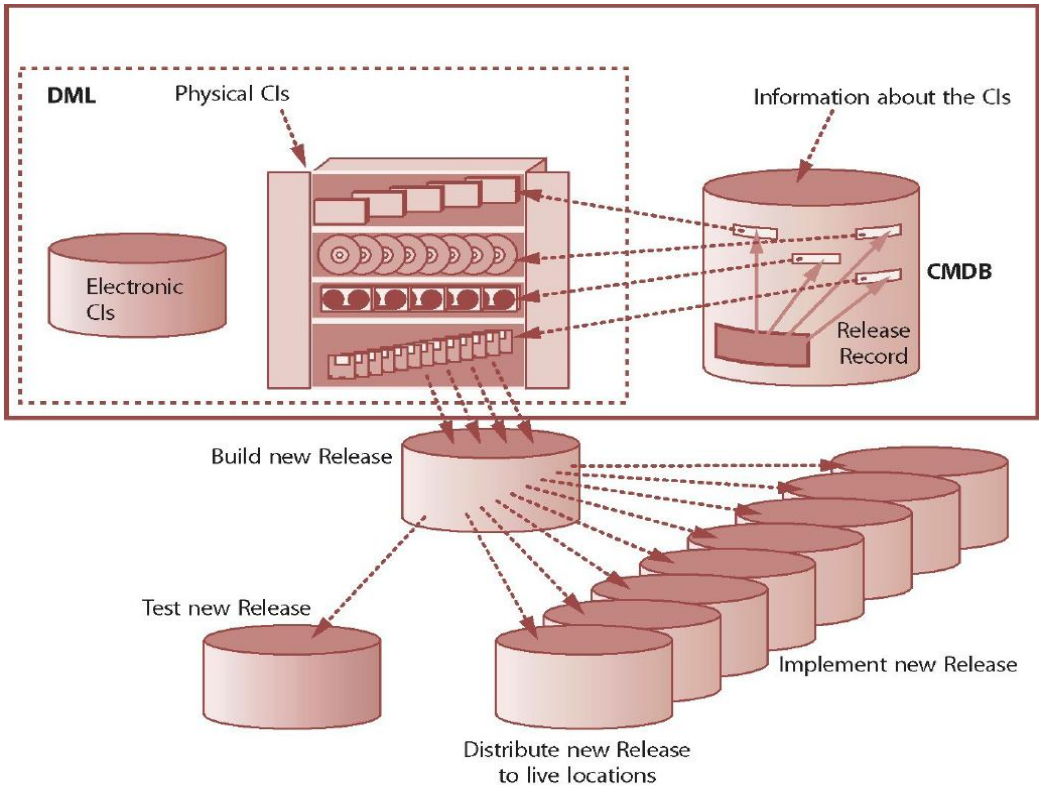


Definitive Media Library (DML)

- Master copies of all software assets
  - In house, external software house, Commercial off the Shelf (COTS)
  - Scripts as well as code
  - Management tools as well as applications
  - Including licenses
- Quality checked
  - Complete, correct, virus scanned.
- The only source for build and Distribution

Definitive Store (DS)

- Physical storage of all hardware
  - Ex. Desktops and Laptops etc..



Release and Deployment management

The purpose of the release and deployment management process is to plan, schedule and control the build, test and deployment of releases, and to deliver new functionality required by the business while protecting the integrity of existing services.

Objectives

•Define and agree release and deployment management plans with customers and stakeholders

•Deploy release packages from the DML to the live environment following an agreed plan and schedule

•Ensure that all release packages can be tracked, installed, tested, verified and/or uninstalled or backed out if appropriate

•Ensure that there is knowledge transfer to enable the customers and users to optimize their use of the service to support their business activities

•Ensure that skills and knowledge are transferred to service operation functions to enable them to effectively and efficiently deliver, support and maintain the service according to required warranties and service levels.

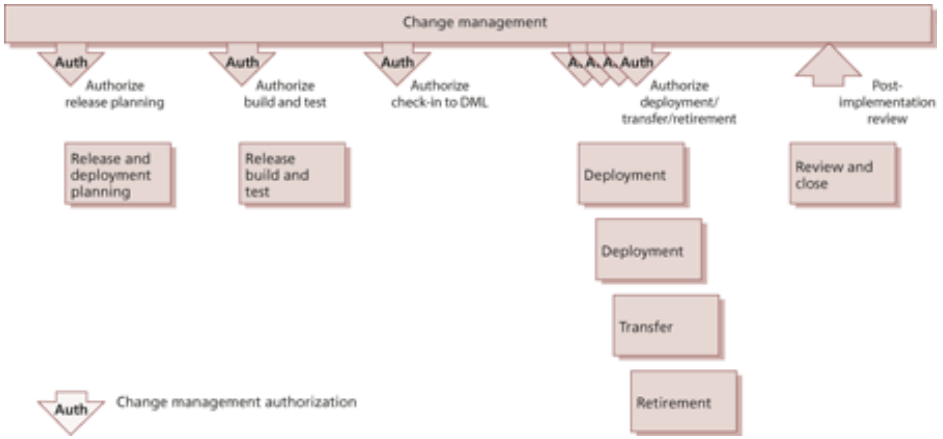
Scope

The scope includes all configuration items required to implement a release, for example:

- Physical assets such as a server or network
- Virtual assets such as a virtual server or virtual storage
- Applications and software
- Training for users and IT staff
- Services, including all related contracts and agreements.

Four Phases of Release and Deployment

- Release and deployment planning
- Release build and test
- Deployment
- Review and close.



Release Deployment Options

- Options for deploying Releases
  - Big Bang
    - New or changed service is deployed to all user areas in one operation
  - Phased Approach
    - The service is deployed to a part of the user base initially - this operation is repeated
- Push Approach
  - Service component is deployed from the centre and pushed out to the target locations
- Pull Approach
  - Software releases where the software is made available in a central location but users are free to pull the software down to their own location at a time of their choosing or when a user workstation restarts
- Push and Pull can be combined with Big-bang or Phased approach
- Automated versus manual deployment
  - Single release or many related releases
  - Can include hardware, software, utility, warranty, documentation, training

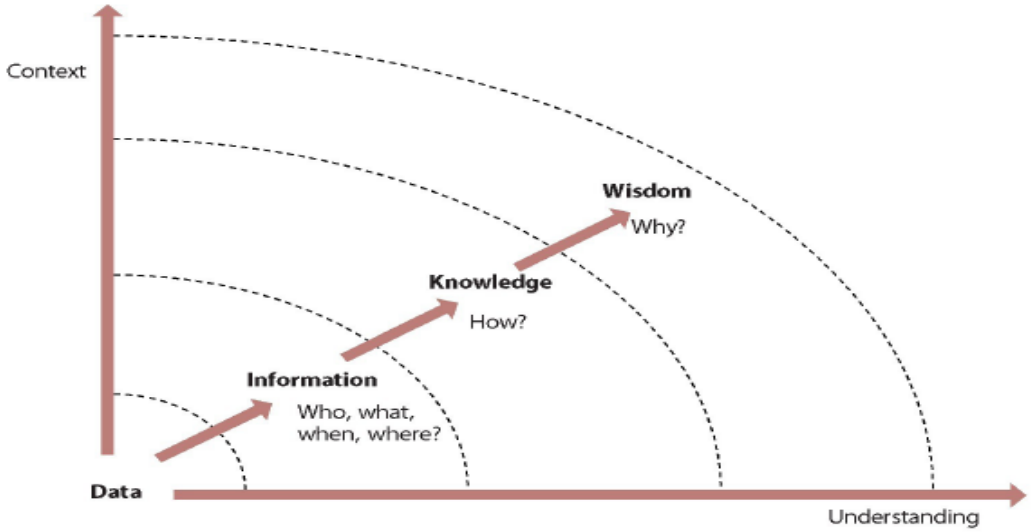
Knowledge Management

The purpose of the knowledge management process is to share perspectives, ideas, experience and information; to ensure that these are available in the right place at the right time to enable informed decisions; and to improve efficiency by reducing the need to rediscover knowledge.

Objectives

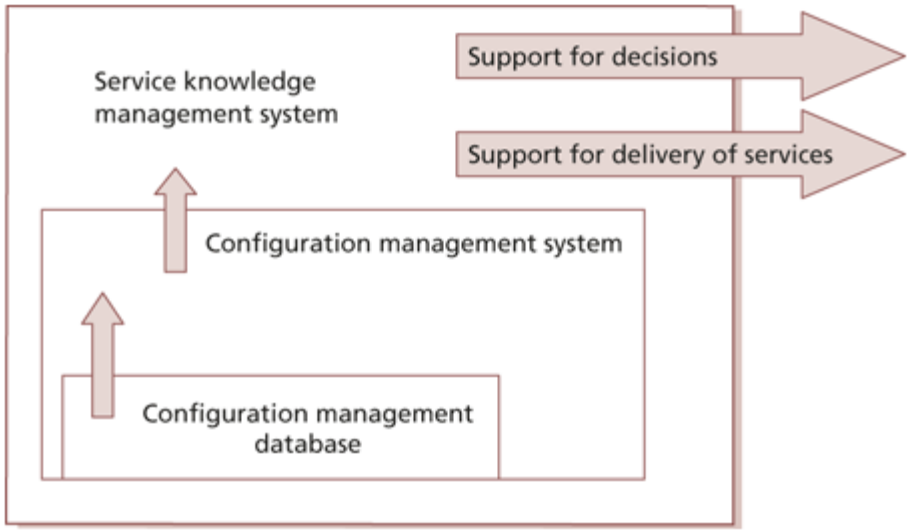
- Improve the quality of management decision-making by ensuring that reliable and secure knowledge, information and data is available throughout the service lifecycle
- Enable the service provider to be more efficient and improve quality of service, increase satisfaction and reduce the cost of service by reducing the need to rediscover knowledge
- Ensure that staff have a clear and common understanding of the value that their services provide to customers and the ways in which benefits are realized from the use of those services
- Maintain a service knowledge management system (SKMS) that provides controlled access to knowledge, information and data that is appropriate for each audience
- Gather, analyze, store, share, use and maintain knowledge, information and data throughout the service provider organization.

DIKW



- The Service Knowledge Management System (SKMS)
  - A set of tools and databases that are used to manage knowledge and information.
  - Includes the Configuration Management System, as well as other tools and databases.
  - Stores, manages, updates, and presents all information that an IT Service Provider needs to manage the full Lifecycle of IT Services

Relationship of the CMDB, CMS and SKMS



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Module 6

Service Operations

Event Management

An event can be defined as any change of state that has significance for the management of a configuration item (CI) or IT service. Events are typically recognized through notifications created by an IT service, CI or monitoring tool.

The objectives of the event management process are to:

•Detect all changes of state that have significance for the management of a CI or IT service

•Determine the appropriate control action for events and ensure these are communicated to the appropriate functions

•Provide the trigger, or entry point, for the execution of many service operation processes and operations management activities

•Provide the means to compare actual operating performance and behavior against design standards and SLAs

•Provide a basis for service assurance and reporting; and service improvement.

Types of Events

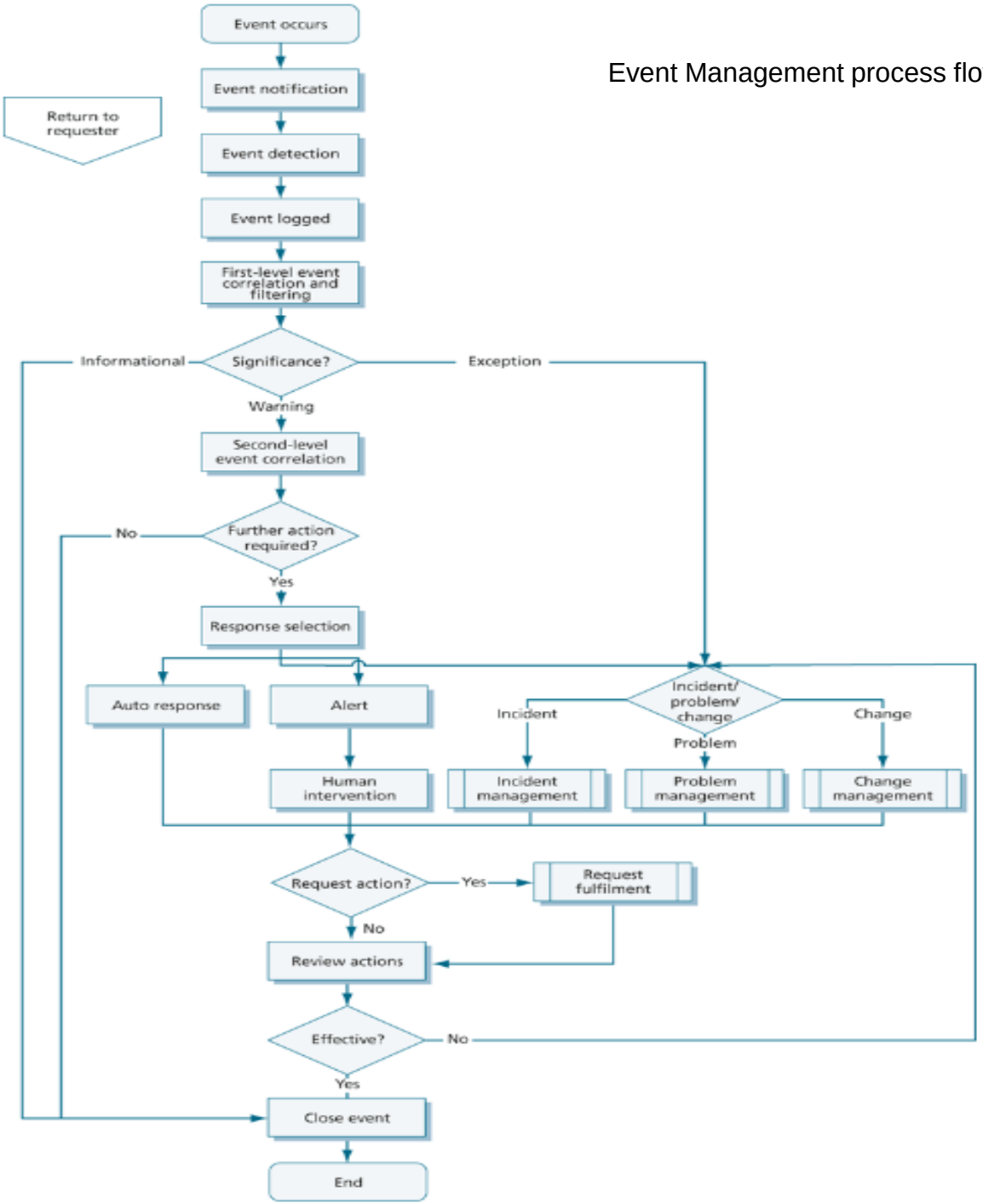
- **Information**
  - An event that does not require any action and does not represent an exception

    Example:
    - A user logs onto an application
    - A device has come online
- **Warning**
  - An event that is generated when a service or device is approaching a threshold

    Example:
    - Memory utilization on a server is currently at 65% and increasing. If it reaches 75%, response times will be unacceptably long
- **Exception**
  - An event that is generated when a service or device is currently operating abnormally

    Example:
    - A server is down
    - A segment of the network is not responding to routine requests

Event Management process flow



Incident Management

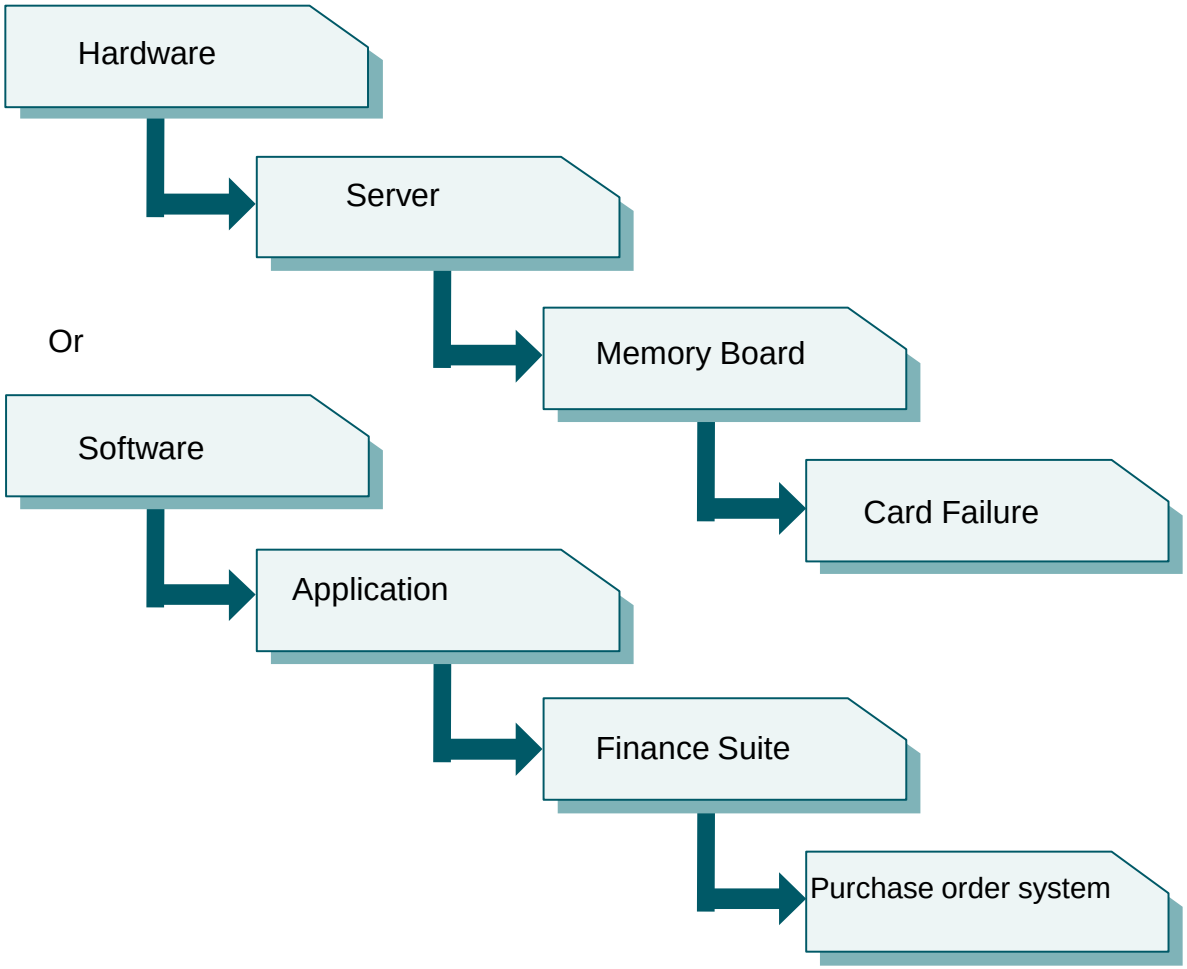
In ITIL terminology, an ‘incident’ is defined as an **unplanned interruption to an IT service or reduction in the quality of an IT service or a failure of a CI** that has not yet impacted an IT service (for example failure of one disk from a mirror set).

Incident management is the process responsible for managing the lifecycle of all incidents. **Incidents may be recognized by technical staff, detected and reported by event monitoring tools, communications from users (usually via a telephone call to the service desk), or reported by third-party suppliers and partners.**

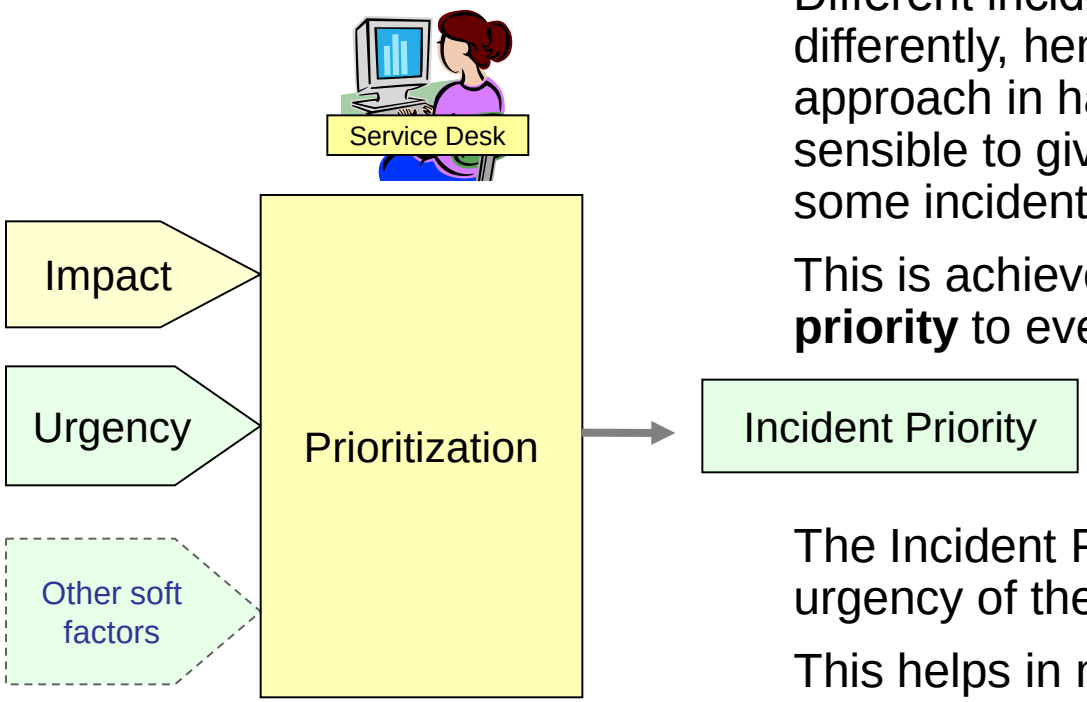
The objectives of the incident management process are to:

- Ensure that standardized methods and procedures are used for efficient and prompt response, analysis, documentation, ongoing management and reporting of incidents
- Increase visibility and communication of incidents to business and IT support staff
- Enhance business perception of IT through use of a professional approach in quickly resolving and communicating incidents when they occur
- Align incident management activities and priorities with those of the business
- Maintain user satisfaction with the quality of IT services.

Incident Categorization



Incident Prioritization



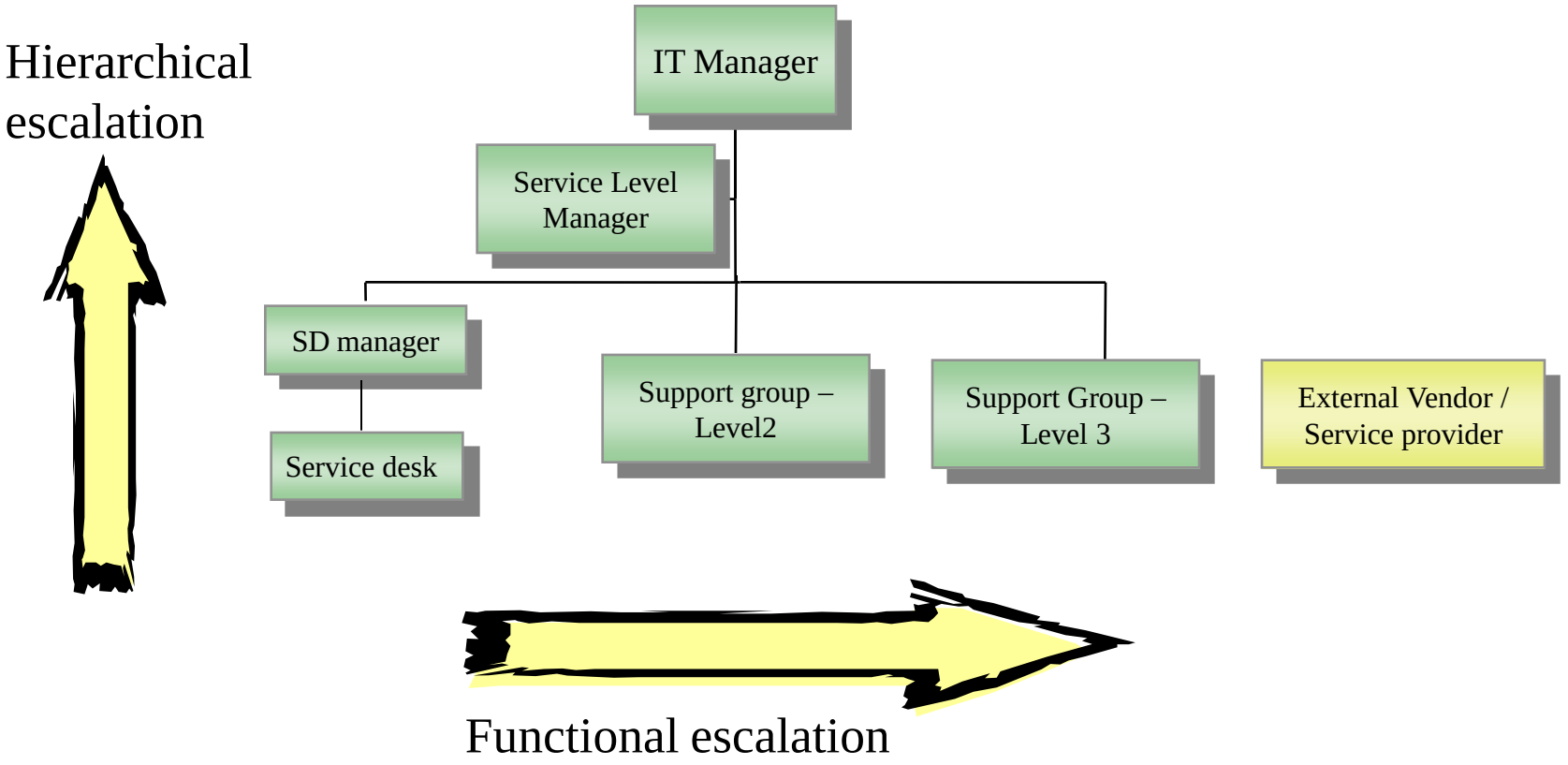
Different incidents “affects” the organization differently, hence, instead of adopting a FIFO approach in handling the incident queue, it is sensible to give preferential treatment to some incidents.

This is achieved by assigning a relative **priority** to every incident.

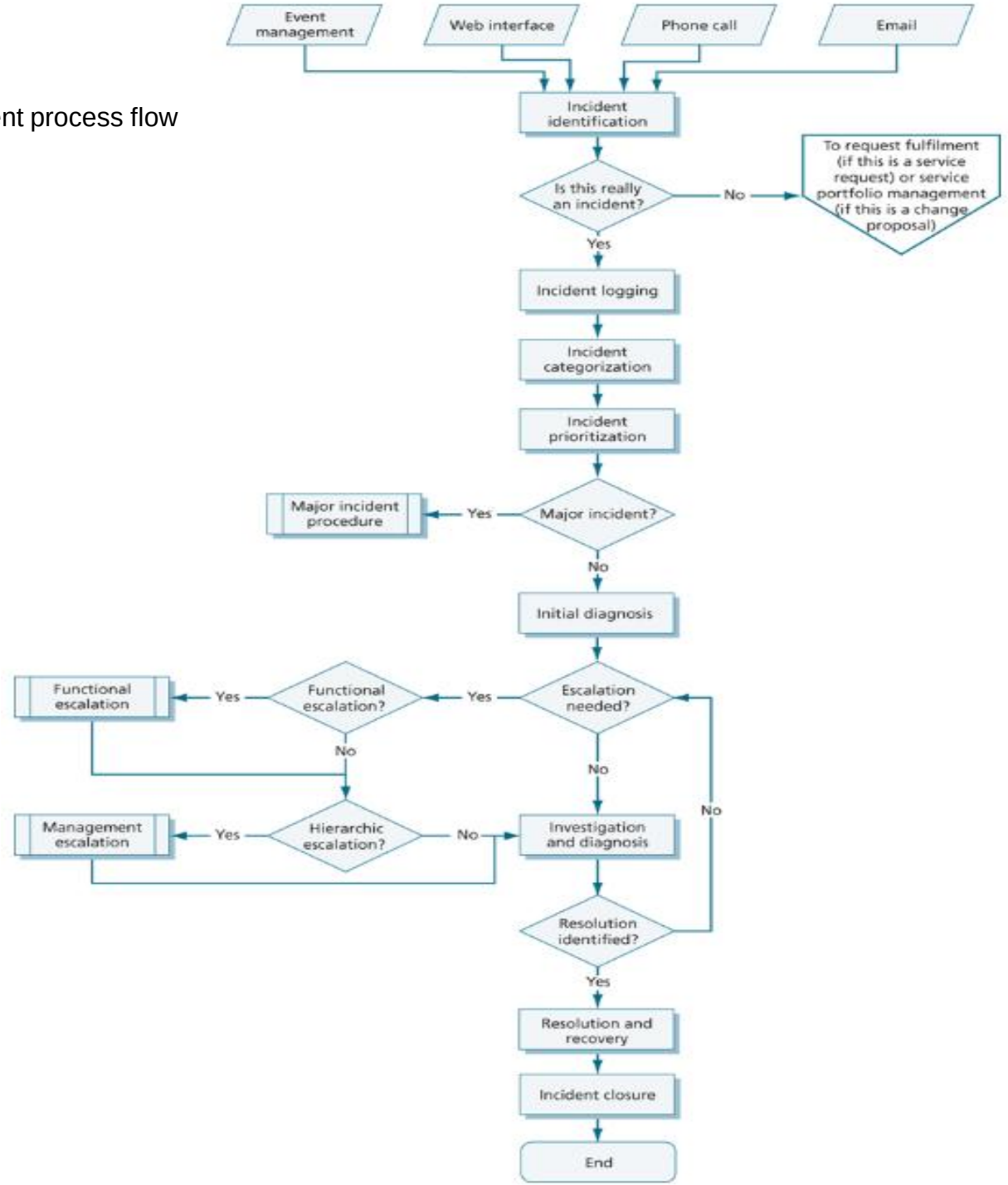
The Incident Priority is based on Impact and urgency of the incident

This helps in minimizing the cumulative impact of Incidents on the business, while making the best utilisation of the available resources.

Escalations



Incident Management process flow



Request Fulfillment

Service Request

The term ‘service request’ is used as a generic description for many different types of demands that are placed upon the IT organization by the users.

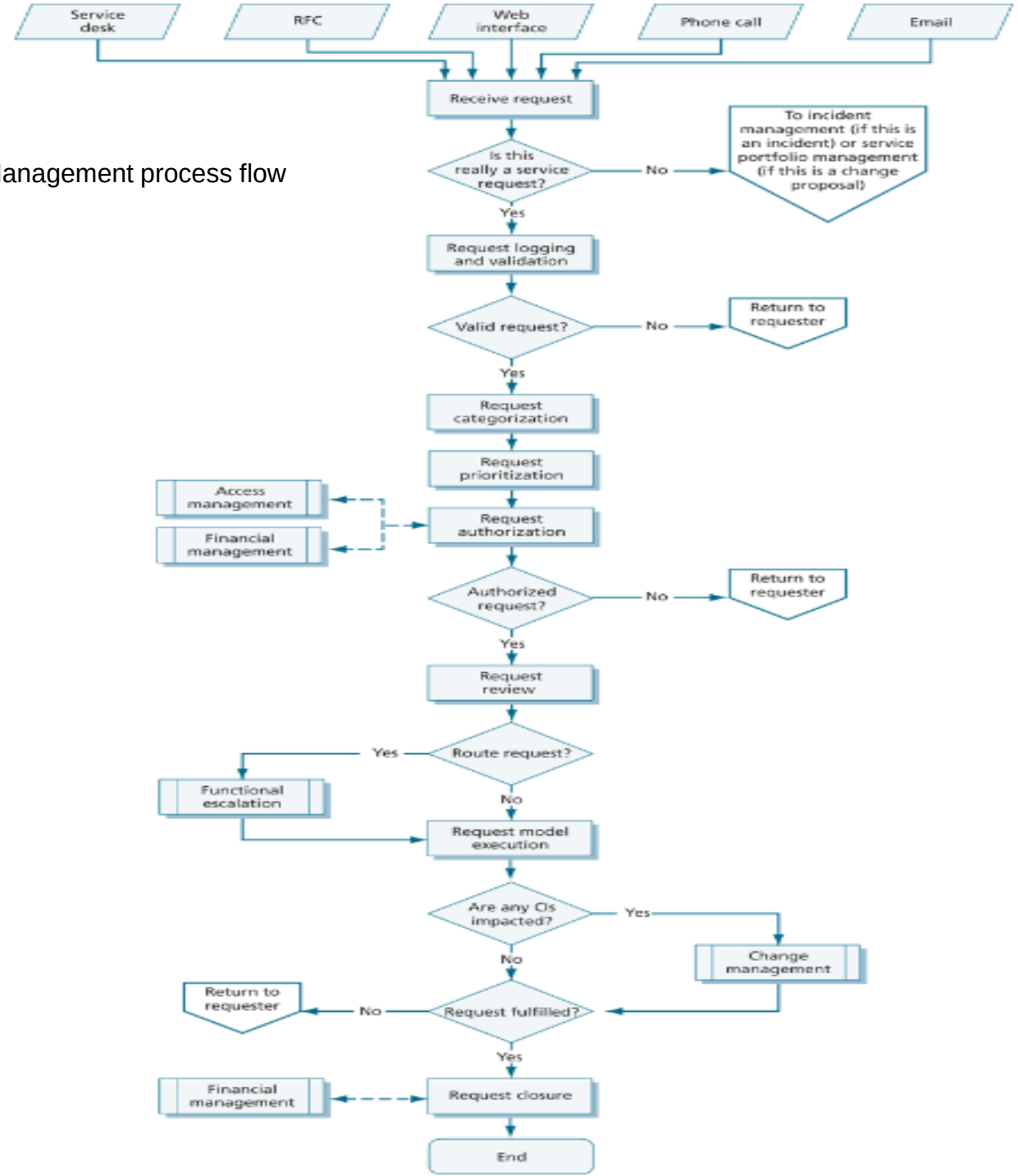
Many of these are typically requests for small changes that are low risk, frequently performed, low cost etc. (e.g. a request to change a password, a request to install an additional software application onto a particular workstation, a request to relocate some items of desktop equipment) or may be just a request for information.

Do not require an RFC

Objectives

- To provide a channel for users to request and receive standard services for which a pre-defined approval and qualification process exists
- To source and deliver the components of requested standard services (e.g. licences and software media)
- To assist with general information, complaints or comments.

Request Fulfillment Management process flow



Problem Management

Problem management is the process responsible for managing the lifecycle of all problems. ITIL defines a ‘problem’ as the underlying cause of one or more incidents.

Objectives

- To prevent problems and resulting Incidents from happening
- To eliminate recurring incidents
- To minimize the impact of incidents that cannot be prevented

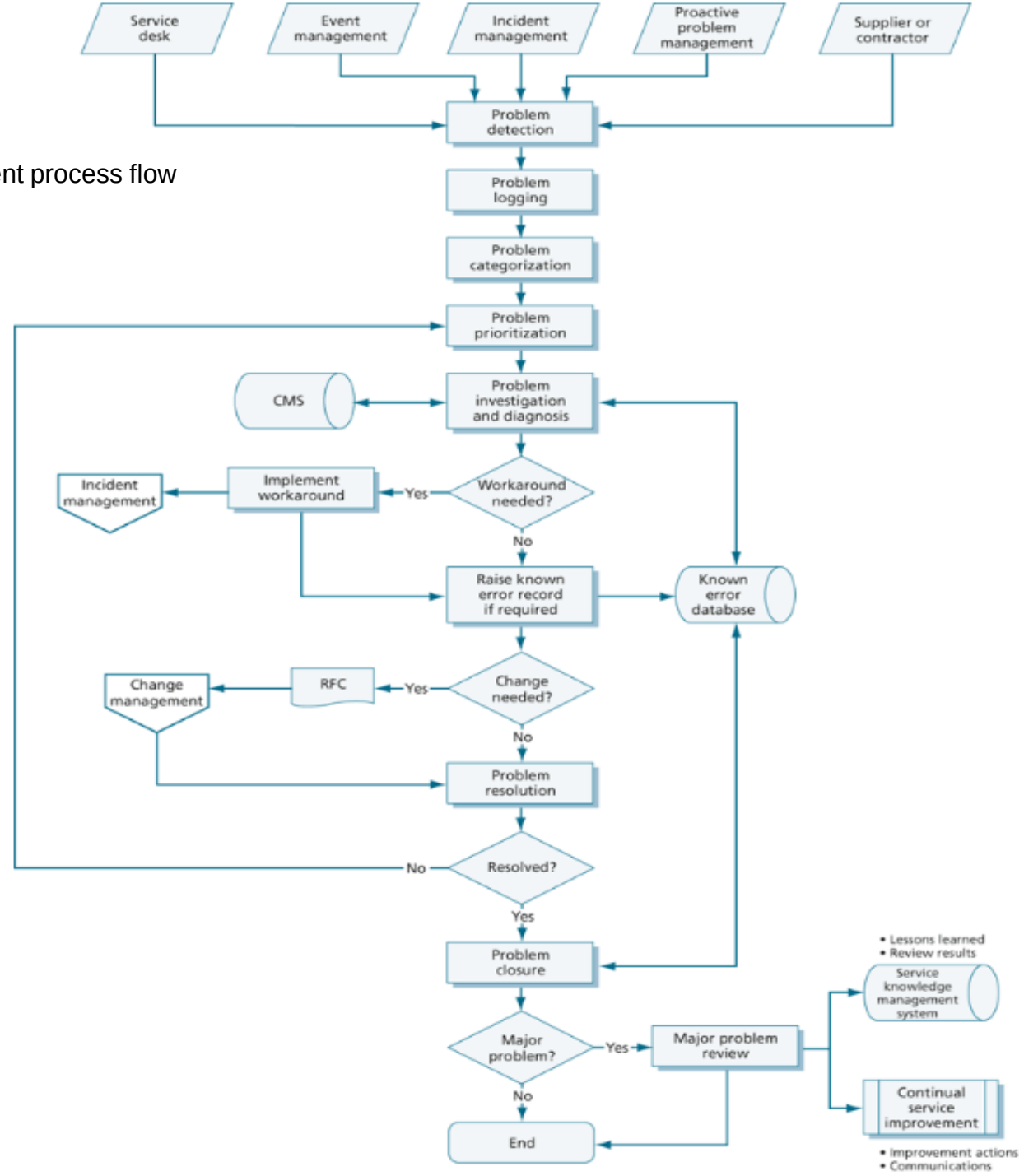
Basic Concepts

- **Problem Models**
  - Standard models to manage certain type of problems
- **Workaround**
  - Reducing or eliminating the Impact of an Incident or Problem for which a full Resolution is not yet available
  - A temporary way of overcoming the difficulties
  - Example:
  - Restarting a failed Configuration Item
  - Workarounds documented in Known Error Record
- **Known Error**
  - Problems for which root causes are known and with a workaround
- **Known Error Database**
  - Database of Known Errors containing symptoms, causes, solutions/workarounds
  - Part of Service Knowledge Management System (SKMS)

Basic Concepts Contd..

- Two Major Processes in Problem Management
  1. Reactive Problem Management
     - Resolution of underlying cause(s)
     - Managed in Service Operations
  2. Pro-active Problem Management
     - Prevention of future problems
     - Initiated in Service Operations Lifecycle but driven as part of CSI

Problem Management process flow



Access Management

- Process of granting authorized users the right to use a service, while preventing access to non-authorized users
- Helps to protect the Confidentiality, Integrity and Availability of Assets
- Execution of policies and actions defined in Security and Availability Management
- Sometimes referred as Rights Management or Identity Management

Objectives

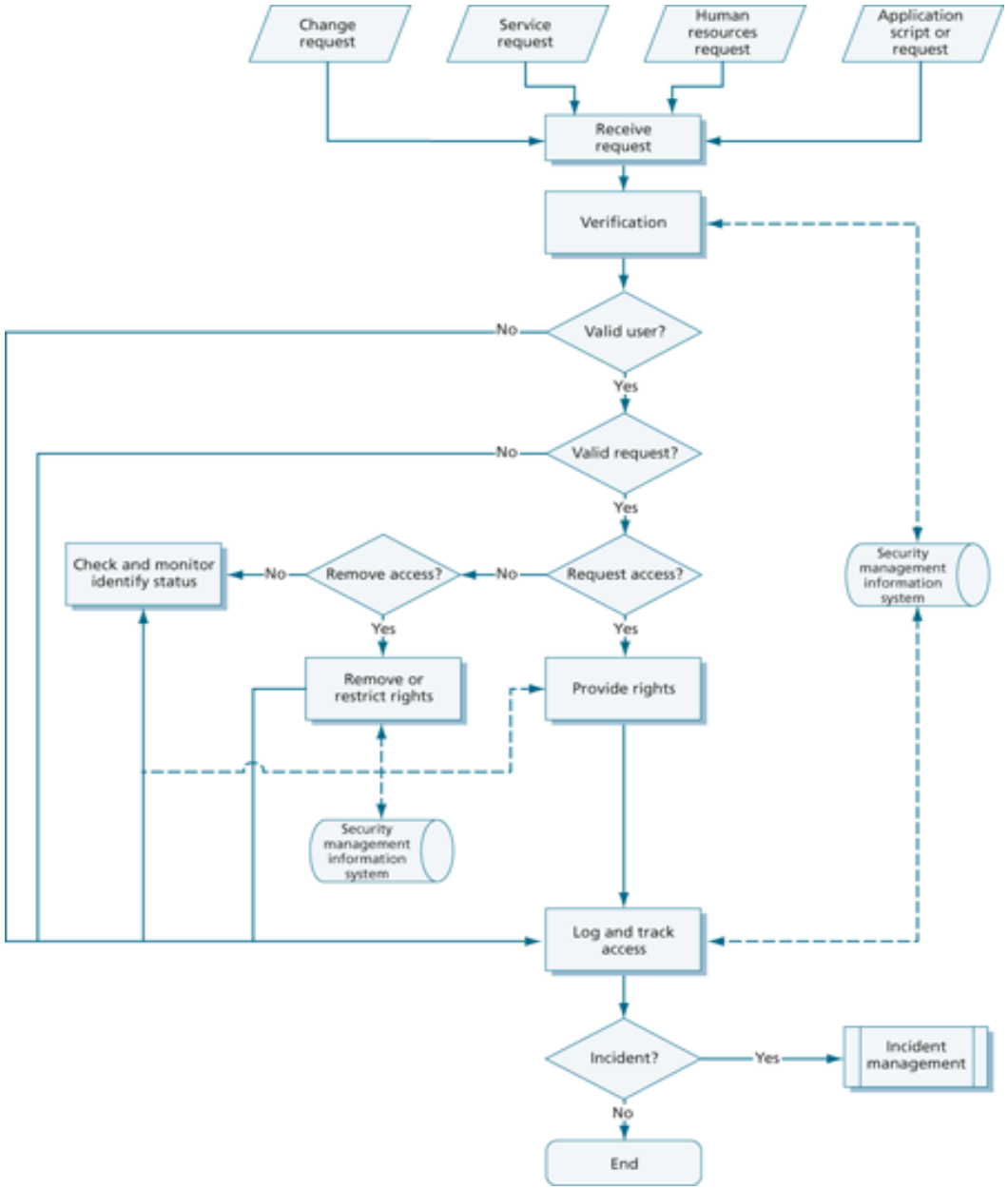
- Granting authorized users the right to use a service
- Preventing access by non-authorized users

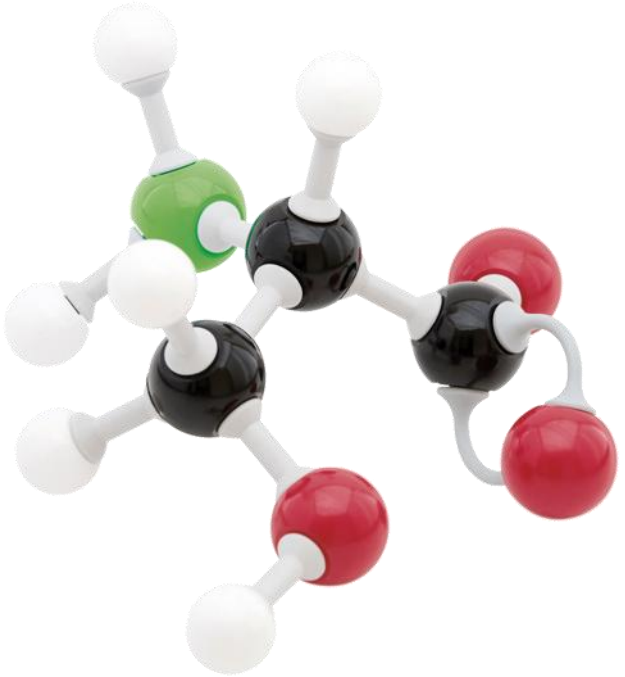
Basic Concepts

- **Access**
  - The level and extent of a service's functionality or data that a user is entitled to use
- **Identity**
  - Information used to uniquely identify a User, person or Role
  - Used to grant Rights to that User, person, or Roles
- **Rights**
  - Refers to the actual settings whereby a user is provided access to a service or group of services
  - Example:

    The Right to modify particular data, or to authorize a Change
- **Services or Service Groups**
  - Set of Services to which access is provided to Users
- **Directory Services**
  - Specific type of tool that is used to manage access and rights

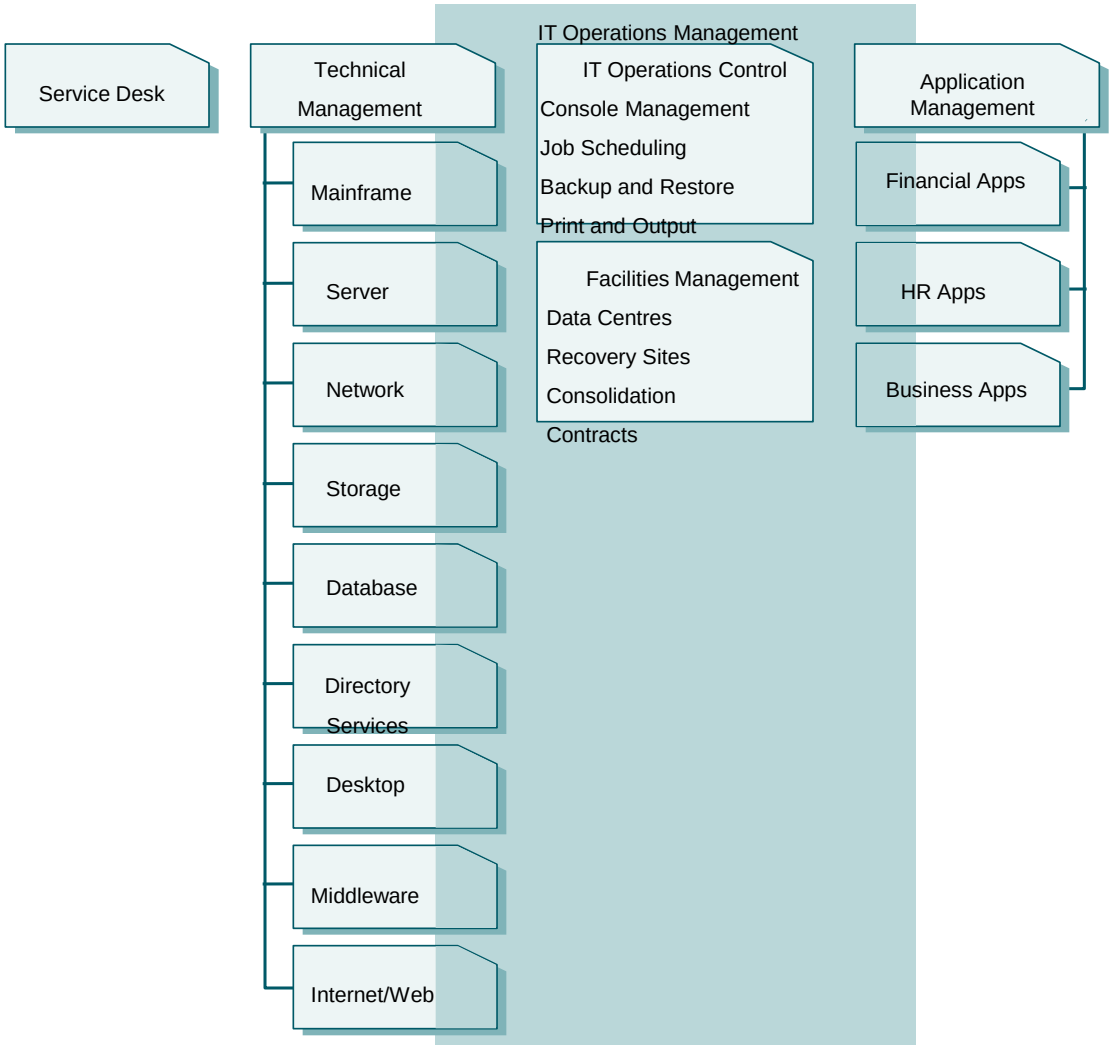
Access Management process flow





Functions

Functions



IT Operations Management activities and staff may be provided by distributed or specialized departments as illustrated by the overlapping from the Technical and Application Management functions.

Service Desk

- The Single Point of Contact between the Service Provider and the Users. A typical Service Desk manages Incidents and Service Requests, and also handles communication with the Users.

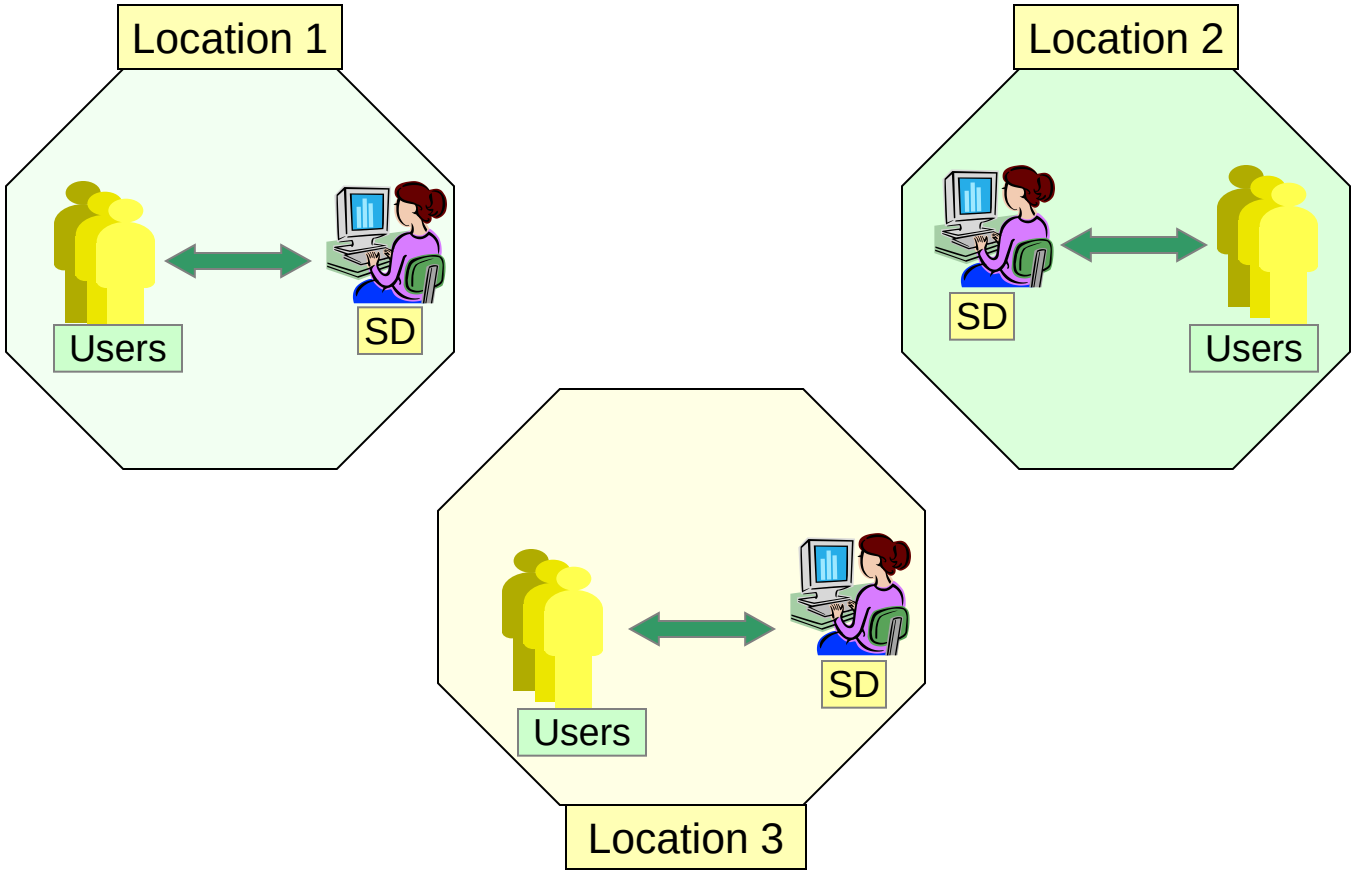
Benefits

- Improved customer service, perception and satisfaction
- Increased accessibility through a single point of contact, communication and information
- Better-quality and faster turnaround of customer or user requests
- Improved teamwork and communication
- Enhanced focus and a proactive approach to service provision
- A reduced negative business impact
- Better-managed infrastructure and control
- Improved usage of IT Support resources and increased productivity of business personnel
- More meaningful management information for decision support
- A good Service Desk can often compensate for deficiencies elsewhere in the IT organization

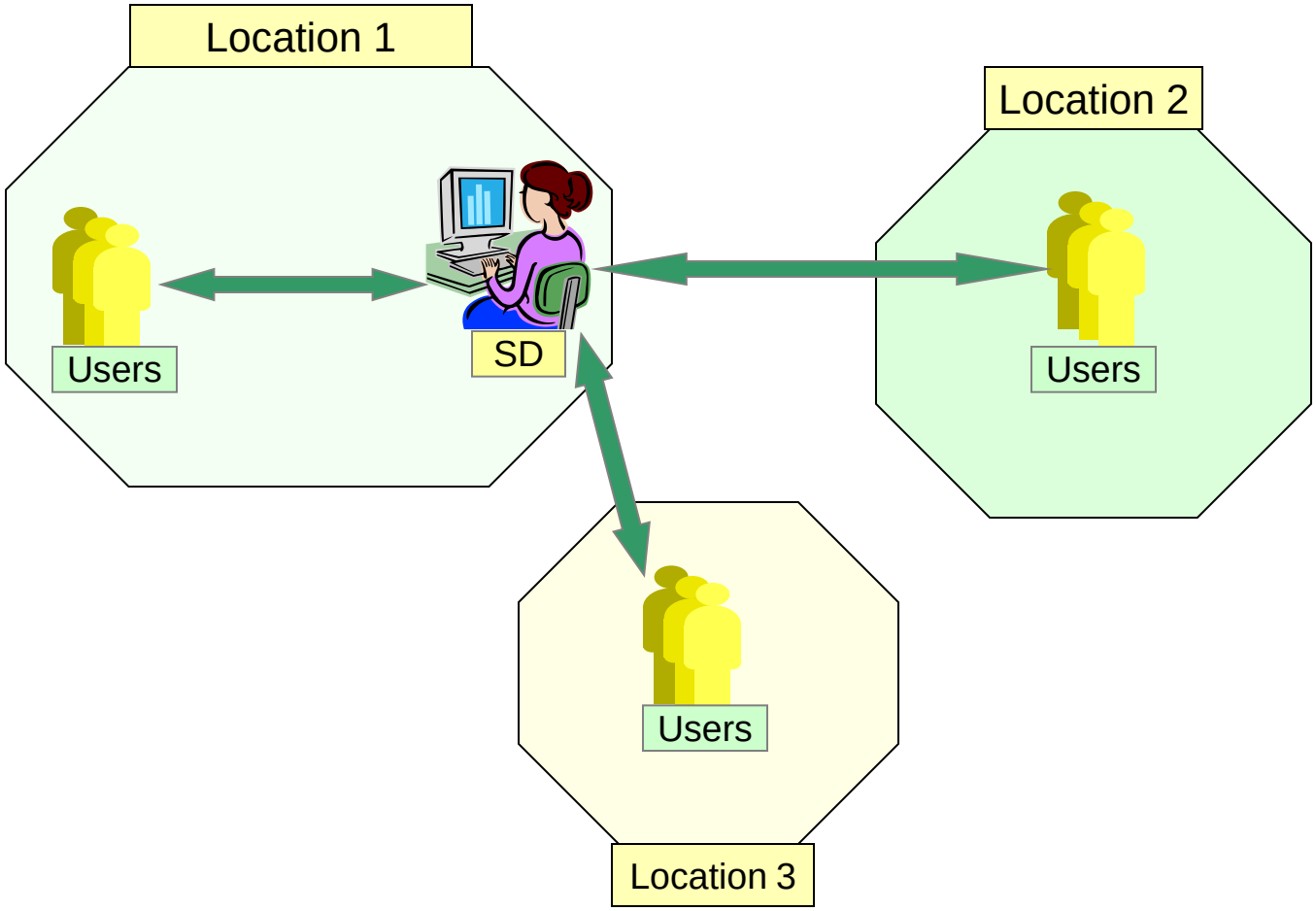
Service Desk Structure

- Local Service Desk
- Centralized Service Desk
- Virtual Service Desk
- Follow the Sun
- Specialized Service Desk groups

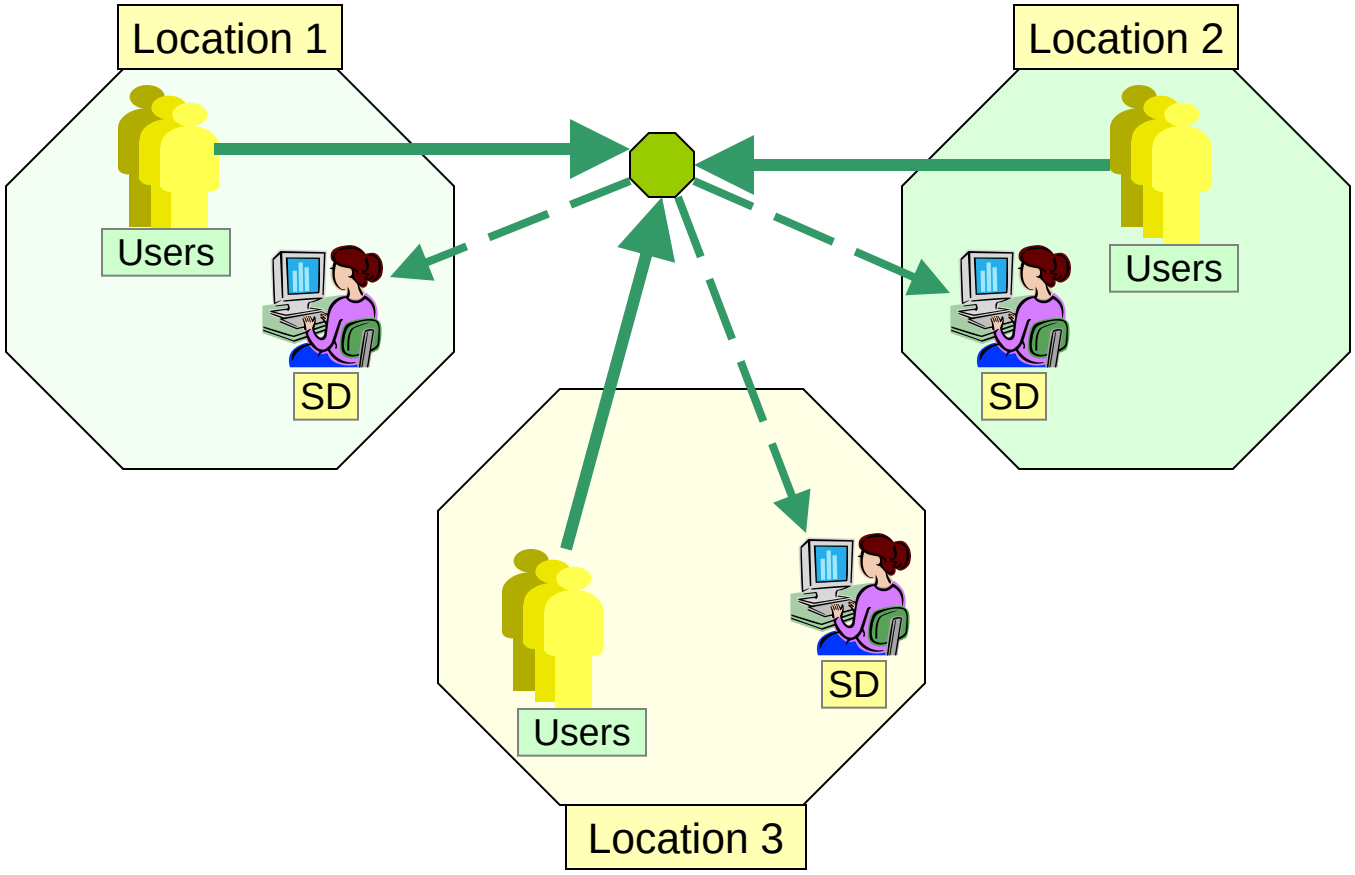
Local Service Desk



Centralized Service Desk



Virtualized Service Desk



Technical Management

- The groups, departments or teams that provide technical expertise and overall management of the IT infrastructure
- Role of Technical Management
  - Custodians of technical knowledge and expertise related to managing the IT Infrastructure
  - Provide the actual resources to support the IT Service Management Lifecycle
  - Guidance to IT Operations Management
- Well designed and highly resilient, cost-effective technical topology
- Use of adequate technical skills to maintain the technical infrastructure in optimum condition
- Use of technical skills to speedily diagnose and resolve any technical failures that do occur

Application Management

- Manages applications throughout their lifecycle
- Role in the design, testing and improvement of Applications that form a part of IT Services
- Involved in development projects, but not usually same as the Application Development teams
- Custodian of expertise for Applications
- Provides resources throughout the lifecycle
- Guidance to IT Operations Management

IT Operations Management

- The department, group or team of people responsible for performing the organization's day-to-day operational activities

- **IT Operations Management has two functions**

  1. IT Operations Control

  – Console Management

  – Backup and restore

  – Performance of maintenance activities

  – Monitoring the Infrastructure, applications and services

  2. Facilities Management

  – Management of Physical IT environment

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Module 7

Continual Service Improvement

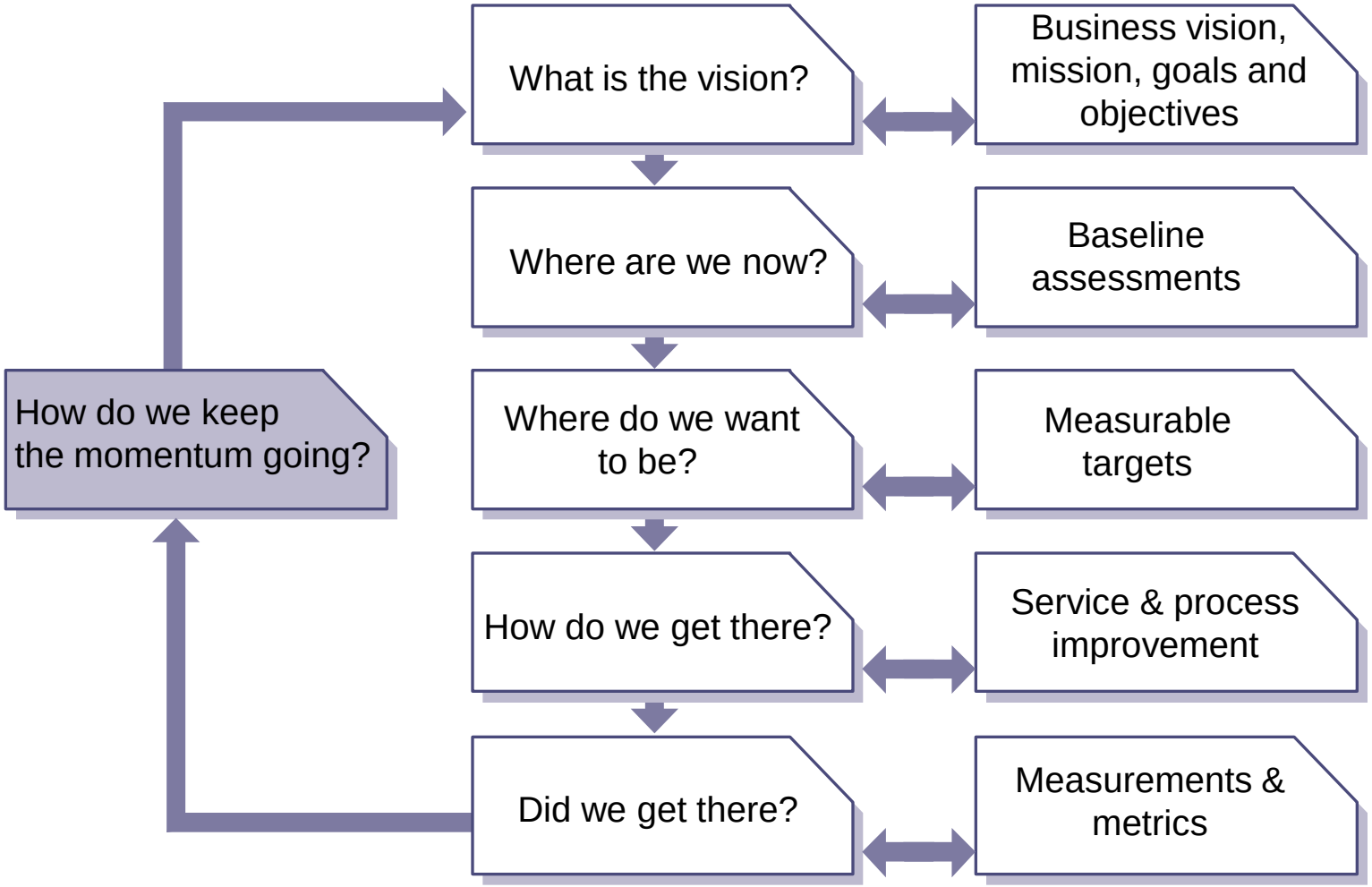
CSI

- Continually align and realign IT services to the changing business needs
- Improve process effectiveness, efficiency as well as cost effectiveness.
- Have relevant measurements that lead to actionable improvements
  - To understand what to measure, why it is being measured and carefully define the successful outcome.

Objectives

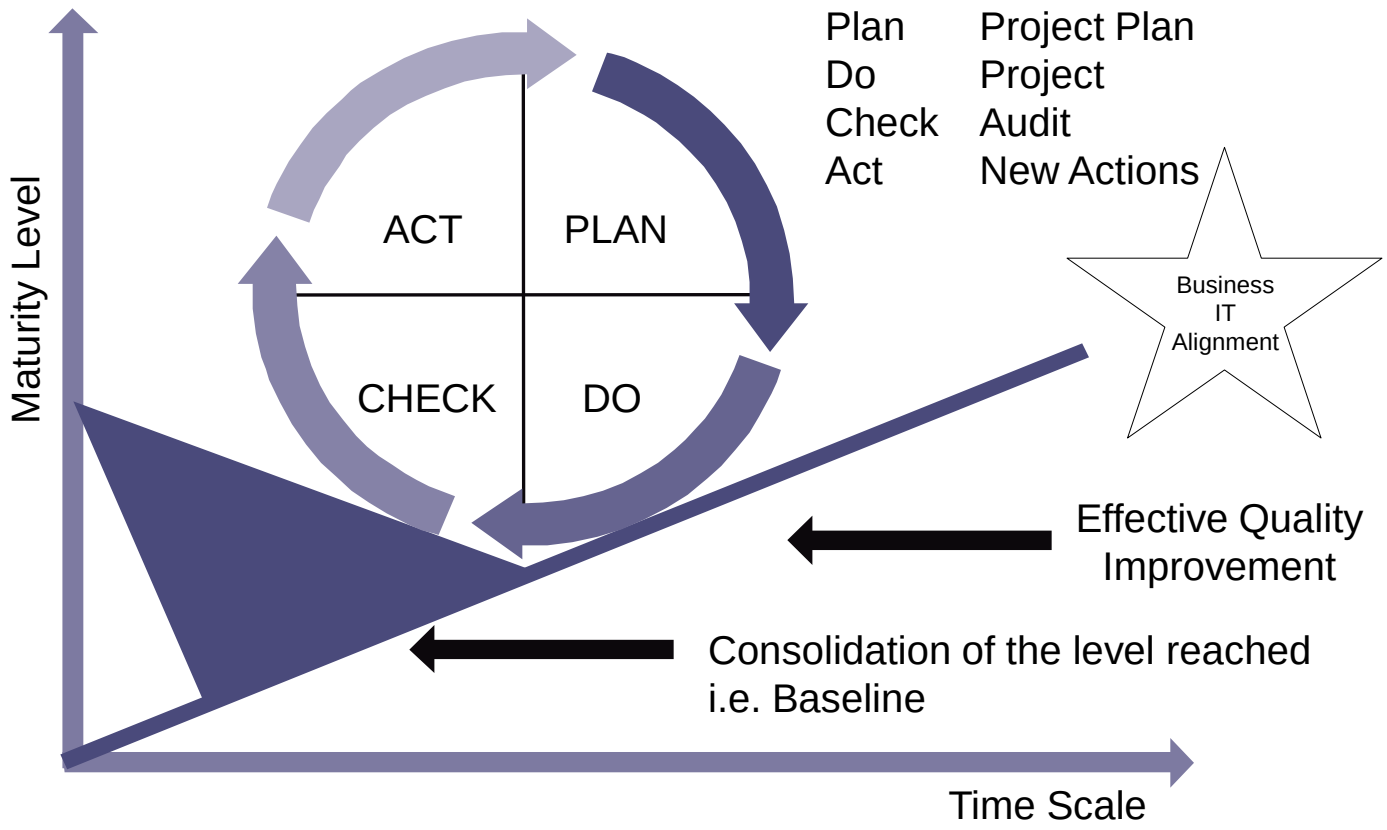
- Review, analyze and make recommendations on improvement opportunities in each lifecycle phase
- Review and analyze Service Level Achievement results
- Improve IT Service quality and improve the efficiency and effectiveness of enabling ITSM processes
- Improve cost effectiveness of delivering IT Services without affecting customer satisfaction adversely
- Ensure applicable quality management methods are used to support continual improvement activities

CSI Model


What is the vision?
Business vision, mission, goals and objectives
Where are we now?
Baseline assessments
Where do we want to be?
Measurable targets
How do we get there?
Service & process improvement
Did we get there?
Measurements & metrics
How do we keep the momentum going?

Deming Cycle

Continuous quality control and consolidation



Service Measurement - Baseline

- A Benchmark used as a reference point.
  - An ITSM Baseline can be used as a starting point to measure the effect of a Service Improvement Plan
  - A Performance Baseline can be used to measure changes in Performance over the lifetime of an IT Service
  - A Configuration Management Baseline can be used to enable the IT Infrastructure to be restored to a known Configuration if a Change or Release fails

- Baselines are also used to establish an initial data point to determine if a service or process needs to be improved.
- If a baseline is not initially established the first measurement efforts will become the baseline.
- It is essential to collect data, even if the integrity of the data is in question.
  - It is better to have data to question than to have no data at all.

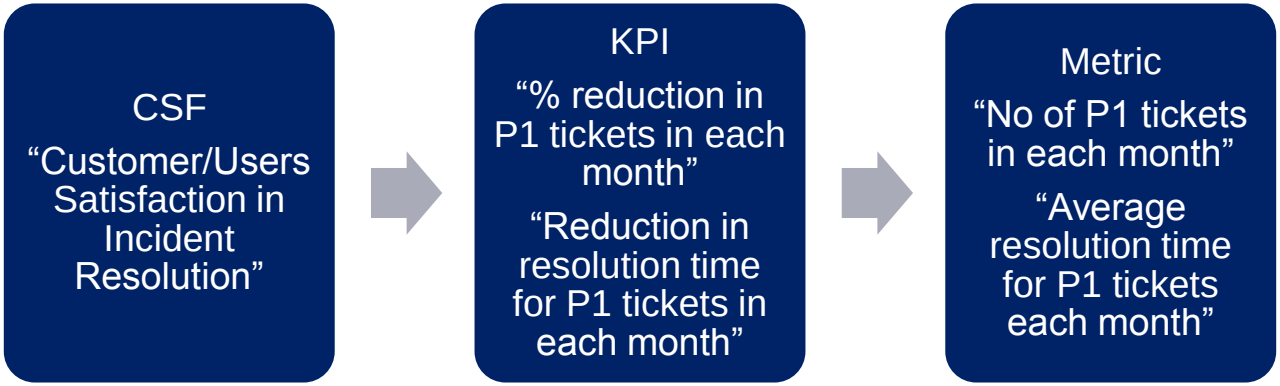
Types of Metrics

- **Technology metrics** – These metrics are often associated with component and application-based metrics such as performance, availability etc.

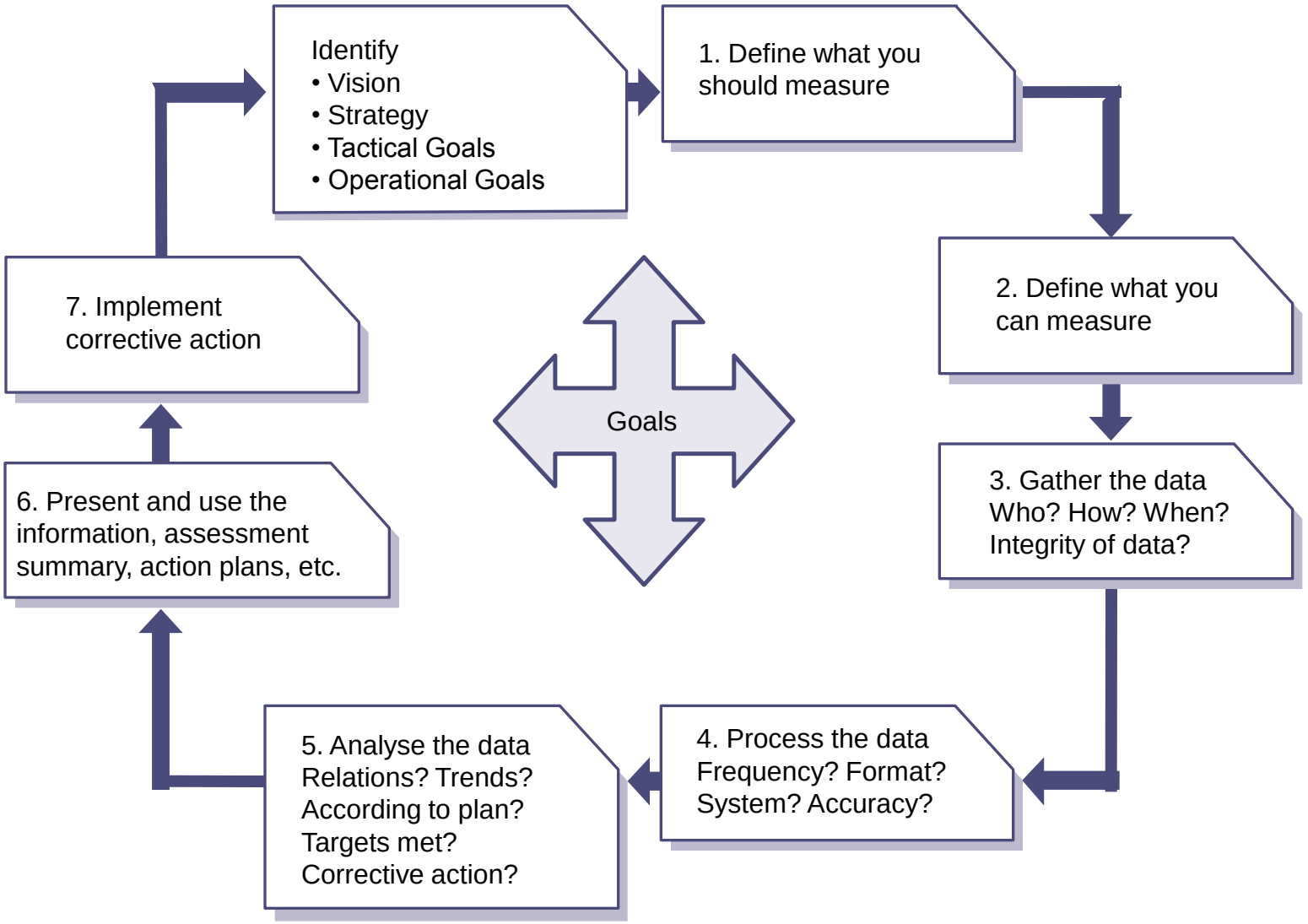
- **Process metrics** – These metrics are captured in the form of CSFs, KPIs and activity metrics for the service management processes. These metrics can help determine the overall health of a process. Four key questions that KPIs can help answer are around quality, performance, value and compliance of following the process. CSI would use these metrics as input in identifying improvement opportunities for each process.

- **Service metrics –** These metrics are the results of the end-to-end service. Component metrics are used to compute the service metrics.

CSF – KPI - Metric



CSI 7 Step Process



CSI Manager

Key responsibilities

- Development of the CSI domain Organizing for Continual Service Improvement
- Responsible for communicating the vision of CSI across the IT organization
- Works with the Service Owner to identify and prioritize improvement opportunities
- Works with the Service Level Manager
  - to ensure that monitoring requirements are defined
  - to identity service improvement plans
- Ensures that monitoring tools are in place to gather data
- Ensures that baseline data is captured to measure improvement against it
- Defines and reports on CSI CSFs, KPIs and CSI activity metrics
- Identifies other frameworks, models and standards that will support CSI activities
- Ensures that Knowledge Management is an integral part of the day-to-day operations
- Reviews analysed data and Presents recommendations to senior management for improvement
- Lead, manage and deliver cross-functional and cross-divisional improvement projects

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Module 8

Technology Consideration

ITSM Tools requirement

- Web front-end and self help for users
- Workflow and process engine
  - Incident and Request Management
  - Problem and Known Errors
  - Change Management
- Integrated CMS
- Discovery, deployment, License technologies
- Remote Control
- Diagnostic utilities
- Management dashboards and Reporting tools

Some more applications of technology

- Event Management
  - Active and passive monitoring
  - Integration with Service Management tools
- Knowledge Management
  - Document Management
  - Records Management
  - Content Management
- Access Management
  - Directory Services and Single sign-on
- Call Centre technologies for Service Desk
  - ACD, IVR, CTI, call recording, reporting etc.

Tools Selection

- **Tool Selection**
  - Create a Statement of Requirements
  - Use MoSCoW analysis to define features
    - M – MUST have this
    - S – SHOULD have this if at all possible
    - C – COULD have this if it does not affect anything else
    - W – WON'T have this time but WOULD like in the future
  - Consider vendor and tool credibility
  - Check references and demonstrations
  - Assess training needs
  - Consider integration with environment

Tool Evaluation Consideration

- Data structure, data handling and integration
- Integration of multi-vendor infrastructure components, and the need to absorb new components in the future – these will place particular demands on the data-handling and modelling capabilities of the tool
- Conformity to international open standards
- Flexibility in implementation, usage and data sharing
- Usability – the ease of use permitted by the user interface
- Support for monitoring service levels
- Distributed clients with a centralized shared database (e.g. client server)
- Conversion requirements for previously tracked data
- Data backup, control and security
- Support options provided by the tool vendor
- Scalability at increasing of capacity (the number of users, volume of data and so on).