ITSM Class: B
CLASS ACTIVITY WEEK 13
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Q1. Availability Management

1. Definition

Availability management is the practice of ensuring that IT services are consistently available to meet the needs and expectations of users and customers. It focuses on two main factors: how frequently a service fails, and how quickly it can recover once a failure occurs. Traditionally, systems were designed to minimize failures by maximizing MTBF (Mean Time Between Failures). However, modern systems tend to prioritize minimizing recovery time (MTRS), allowing services to restore quickly even when failures occur.

To manage availability effectively, organizations must also understand which business functions are impacted during outages, identify when performance degradation becomes unacceptable, and determine appropriate maintenance windows. Availability must be defined based on user perception, not just technical calculations.
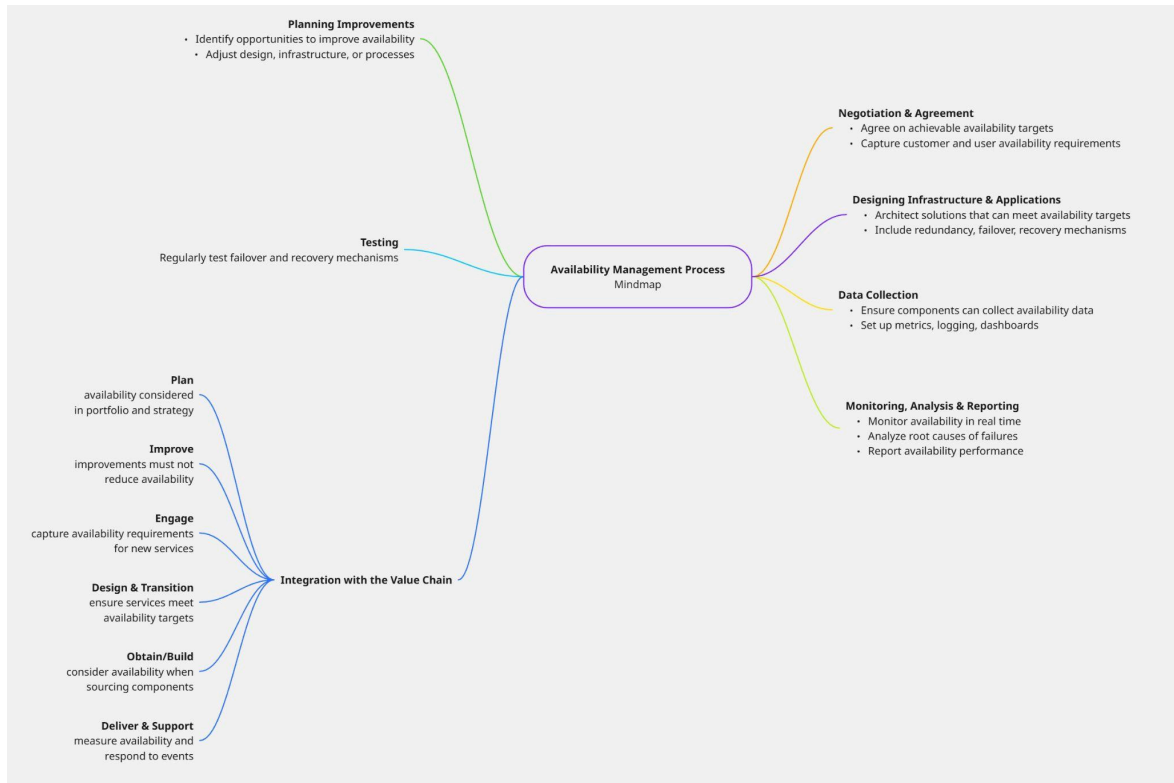
2. Process

Availability management includes several ongoing activities within the organization.

First, availability targets must be negotiated and agreed upon with stakeholders, ensuring they are realistic and aligned with business needs. Next, IT infrastructure and applications must be designed to meet these targets, which often involves building redundancy, implementing failover mechanisms, and ensuring quick recovery capabilities.

To measure availability, systems must be able to collect the necessary data through monitoring tools, logs, and dashboards. Continuous monitoring and analysis help identify incidents, track trends, and uncover root causes of downtime. Organizations then plan improvements to increase availability, whether through architectural changes, process optimization, or capacity enhancements.

Regular testing of failover and recovery mechanisms is also essential to ensure that recovery plans function as intended. Throughout the service lifecycle, availability management contributes to planning, design, building, and operational activities, ensuring that availability remains a core consideration at every stage.

To understand more about Availability Management Process, we can see through this mindmap:

3. KPIs for Availability Management Process

a. User Outage Minutes
b. Lost Transactions
c. Lost Business Value
d. User Satisfaction
e. Availability Percentage

4. MTBF vs MTRS

MTBF (Mean Time Between Failures) represents how often a service or component fails by measuring the average time between failures, making it a key indicator of reliability and stability, while MTRS (Mean Time to Restore Service) represents how quickly a service can be recovered after a failure by measuring the average time required to restore normal operations. Together, MTBF and MTRS provide a complete picture of availability: MTBF focuses on preventing failures from happening frequently, whereas MTRS focuses on minimizing downtime when failures do occur.
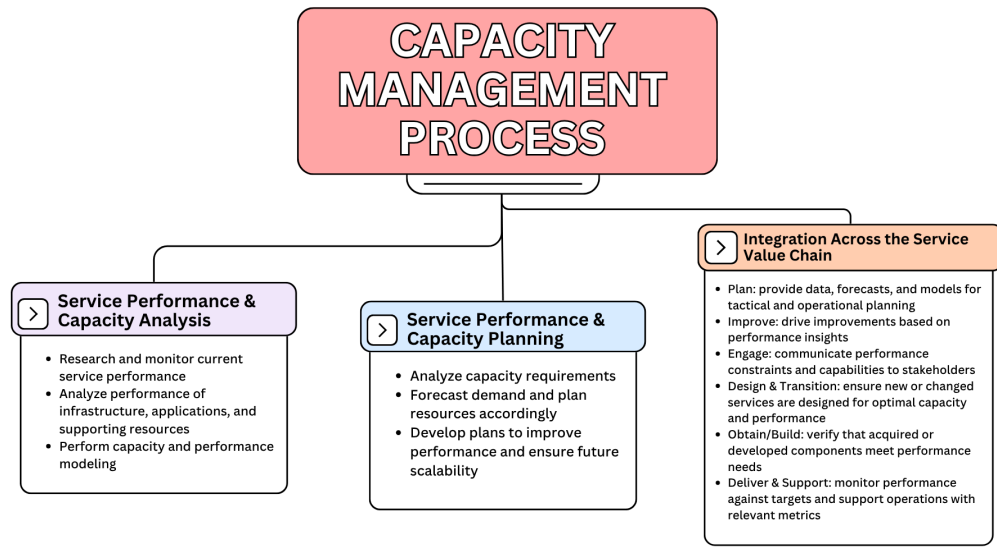
Q2. Capacity Management

1. Definition

Capacity and Performance Management is the practice of ensuring that IT services and their supporting resources (infrastructure, applications, third-party services, and even personnel) can deliver the required service performance at the required levels of demand. It focuses on analyzing, forecasting, planning, and improving service capacity and performance so that services meet customer expectations and maintain value.

2. Process

The Capacity and Performance Management process involves continuously analyzing how services and their supporting resources are performing, which includes monitoring current performance levels, understanding usage patterns, and creating models to predict how the service will behave under different conditions. It also includes planning future capacity by assessing upcoming requirements, forecasting demand, and determining what resources are needed to maintain optimal performance as workloads increase. In addition, the process focuses on planning performance improvements to address bottlenecks and ensure scalability. Throughout the service value chain, this practice supports planning with accurate data and forecasts, drives improvements with performance insights, helps manage user expectations by communicating performance capabilities, ensures that new services are designed with appropriate capacity, verifies that acquired or developed components meet performance needs, and finally supports day-to-day operations with performance targets, measurements, and reporting tools.

CAPACITY MANAGEMENT PROCESS

Service Performance & Capacity Analysis

- Research and monitor current service performance
- Analyze performance of infrastructure, applications, and supporting resources
- Perform capacity and performance modeling

Service Performance & Capacity Planning

- Analyze capacity requirements
- Forecast demand and plan resources accordingly
- Develop plans to improve performance and ensure future scalability

Integration Across the Service Value Chain

- Plan: provide data, forecasts, and models for tactical and operational planning
- Improve: drive improvements based on performance insights
- Engage: communicate performance constraints and capabilities to stakeholders
- Design & Transition: ensure new or changed services are designed for optimal capacity and performance
- Obtain/Build: verify that acquired or developed components meet performance needs
- Deliver & Support: monitor performance against targets and support operations with relevant metrics

3. KPIs

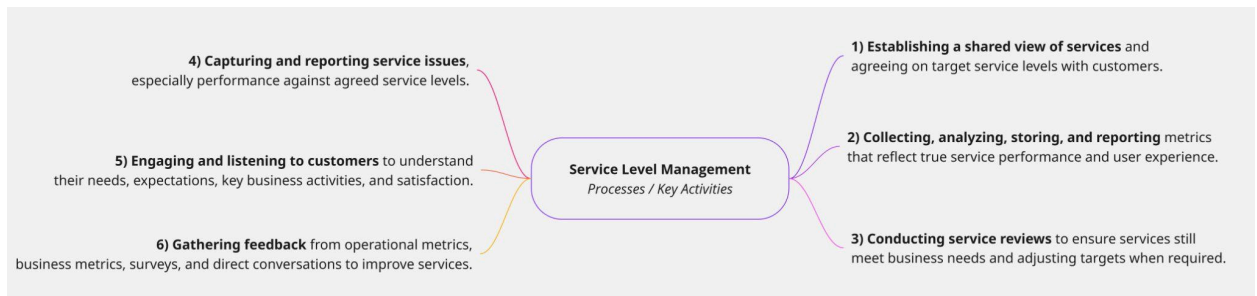|	KPI	Definition
Service Performance KPIs	Response time	Average time to complete a service action
	Throughput	Number of service actions completed per timeframe
	Resource utilization	CPU, memory, storage, network usage
	Peak load performance	Service behavior under maximum demand
Capacity Planning KPIs	Forecast accuracy	Accuracy of demand predictions vs actual usage
	Capacity shortfalls	Number of incidents caused by insufficient capacity
	Scalability readiness	Ability of a service to handle increased load
	Time required to implement capacity upgrades	
Performance Improvement KPIs	Reduction in performance-related incidents	
	Improvement in service response and throughput after enhancements	
	Percentage of improvement actions delivered on schedule	
	User satisfaction with service performance	
Operational KPIs	Performance SLA compliance (e.g., meeting response-time or throughput targets)	
	Mean time to detect performance degradation (MTTD)	

	KPI	Definition
Service Performance KPIs	Response time	Average time to complete a service action
	Throughput	Number of service actions completed per timeframe
	Resource utilization	CPU, memory, storage, network usage
	Peak load performance	Service behavior under maximum demand
	Mean time to resolve performance issues (MTTR)	
	Availability of performance monitoring tools	

Q3. Service Level Management

1. Definition

Service Level Management (SLM) is the practice that ensures end-to-end visibility of an organization's services by defining, agreeing, monitoring, and reviewing service levels with customers. It focuses on creating a shared understanding of services, measuring performance based on meaningful metrics, tracking service issues, and ensuring that services continue to meet customer needs and expectations. SLM relies heavily on customer engagement, communication, and analysis to ensure that service performance reflects actual user experience rather than isolated technical metrics.

2. Process / Key Activities

4) **Capturing and reporting service issues**, especially performance against agreed service levels.

5) **Engaging and listening to customers** to understand their needs, expectations, key business activities, and satisfaction.

6) **Gathering feedback** from operational metrics, business metrics, surveys, and direct conversations to improve services.

Service Level Management
Processes / Key Activities

1) **Establishing a shared view of services** and agreeing on target service levels with customers.

2) **Collecting, analyzing, storing, and reporting** metrics that reflect true service performance and user experience.

3) **Conducting service reviews** to ensure services still meet business needs and adjusting targets when required.

3. Service Level Agreement (SLA)

a. Definition

A Service Level Agreement (SLA) is a documented agreement between a service provider and a customer that defines the required services and the expected level of service.

b. Key Requirements for a Successful SLA

- Linked to defined services in the service catalogue, not just individual technical metrics.
- Focused on outcomes, using balanced metrics that reflect customer experience and business value.
- Created through genuine agreement, involving all stakeholders such as customers, users, sponsors, and partners.
- Simple, clear, and easy to understand for both the provider and the customer.
- Based on customer context, avoiding the "watermelon SLA effect" where technical metrics look green externally but customers experience poor service.
- Reflect actual user experience, incorporating business metrics, operational metrics, and customer satisfaction indicators.

4. KPIs

Category	KPI
Customer Experience & Satisfaction	Customer satisfaction score (CSAT)
	Number of complaints about service performance
	Percentage of services meeting customer-defined expectations
SLA Compliance & Performance	SLA achievement rate (% of SLAs met)
	Number of SLA breaches per period
	Number of "watermelon SLAs" detected (green metrics but negative user feedback)
Service Review &	Frequency and timeliness of service reviews

Improvement	Number of improvement actions identified and completed
	Reduction in repeated service performance issues
Engagement & Feedback Quality	Quantity and quality of customer feedback collected
	Response time to customer feedback or issues
	Percentage of services with updated and relevant SLAs
Operational Insight KPIs	Accuracy of service performance reports
	Alignment between operational metrics and customer-experience metrics
	Trend in key business-related performance measurements

Q4. Service Catalogue Management

1. Description

Service Catalogue Management is the practice responsible for providing a single, consistent source of information about all services and service offerings available to customers and users. It ensures that every service has a clear, accurate, and up-to-date description, enabling effective communication, informed decision-making, and smooth service delivery. The service catalogue helps align IT services with business needs by documenting details such as service features, SLAs, costs, support details, and ordering procedures. It also supports multiple practices across the service value chain by offering tailored views for different audiences.
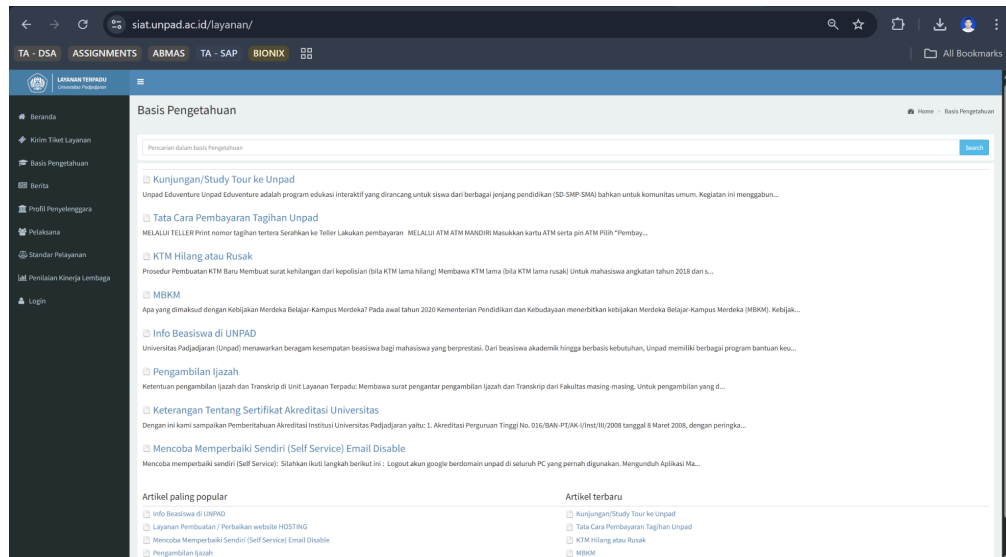
2. The aims of service catalog

The main aims of a service catalogue include:

a. Provide a single source of truth, a central, authoritative repository of all active services offered by the organization.
b. Improve communication with customers and users, describing services in clear, non-technical language to support understanding and engagement.

c. Support request fulfilment, allowing users to browse and request available services, including steps, costs, and expected delivery times.
d. Support service design, transition, and operations, providing information about utility, warranty, SLAs, dependencies, and service performance expectations.
e. Support governance and decision-making, offering visibility into service offerings, usage, cost, and changes to enable strategic planning.
f. Provide tailored views for different audiences, different perspectives for users, customers, and IT teams (e.g., business view vs. technical view).

3. Two examples of service catalog (screenshots and links)

a. https://siat.unpad.ac.id/layanan/

b. https://usc.utoronto.ca/