What is ITIL?

- Full form – Information Technology Infrastructure Library.
- ITIL is a framework for ITSM (Information Technology Service Management).
- ITSM encompasses various processes, policies, and procedures aimed at designing, delivering, managing, and improving the way IT services are utilized within an organization.
- For business, ITIL Provides best practice & technique for:
    - Selecting
    - Planning
    - Delivering
    - Maintaining
- Originally developed by the UK government's Central Computer and Telecommunications Agency (CCTA) in the 1980s, ITIL has evolved into a globally recognized framework used by organizations worldwide.

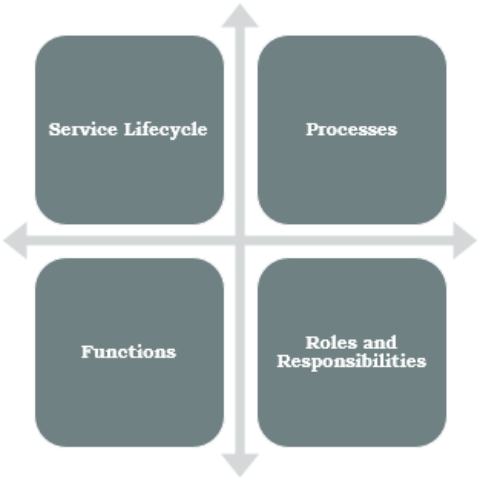
ITIL history timeline:

- ITIL V1 → 1989
- ITIL V2 → 2001
- ITIL V3 → 2007
- *ITIL V4 → 2019*

Key Concepts of ITIL

Service Lifecycle:

- The ITIL service lifecycle is divided into five stages, each focusing on a different aspect of IT service management:
- Service Strategy: Defines the perspective, position, plans, and patterns that a service provider needs to execute to meet an organization's business outcomes.
- Service Design: Transforms service strategy into a plan for delivering the business objectives. It covers designing processes, technology, and architecture.
- Service Transition: Ensures that new or changed services are built, tested, and deployed into the live environment successfully.
- Service Operation: Manages the day-to-day operation of services. It ensures that services are delivered effectively and efficiently.
- Continual Service Improvement: Provides a mechanism for improving all aspects of IT services and the ITSM processes used to support them.



Processes:

- ITIL outlines various processes within these stages, such as:
    - Incident Management: Restoring normal service operation as quickly as possible after an incident.
    - Change Management: Managing the lifecycle of all changes to minimize disruption.
    - Problem Management: Identifying and managing the root causes of incidents.
    - Service Level Management: Ensuring that agreed-upon service levels are met.
    - Capacity Management: Ensuring that IT infrastructure meets current and future capacity needs.

Functions:

- ITIL also identifies key functions that provide structure and stability to the service lifecycle:
    - Service Desk: A single point of contact for users to communicate with the IT department.
    - Technical Management: Manages the infrastructure and provides technical expertise.
    - Application Management: Manages applications throughout their lifecycle.
    - IT Operations Management: Manages the day-to-day operations of the IT infrastructure.

Roles & Responsibilities

- ITIL defines various roles to ensure accountability and clarity within the IT service management framework:
    - Service Owner: Responsible for the overall design, performance, integration, and improvement of a single service.
    - Process Owner: Ensures that a process is fit for its purpose and is responsible for process design, performance, and improvement.
    - Service Manager: Manages the development and delivery of IT services.
    - IT Operations Manager: Ensures efficient and effective delivery of IT services.

Benefits of ITIL

- Lower cost
- High-Quality of IT service.
- Increased business productivity.
- Improved Return on Investment (ROI).
- Greater Satisfaction.
- Improved resources utilization.

What is ITSM?

It focuses on meeting the needs of customers and aligning IT services with business objectives.

- ITIL is a specific framework for ITSM,
- ITIL → providing detailed guidance on processes, functions, roles, and best practices, while
- ITSM → is a broader concept encompassing the overall management and delivery of IT services within an organization.
- Both ITIL and ITSM aim to improve the quality, efficiency, and alignment of IT services with business objectives.

Key Components of ITSM

- Service Strategy
- Service Design
- Service Transition
- Service Operation
- Continual Service Improvement (CSI)

The 7-step Improvement Process:

- This process helps organizations systematically identify and implement improvements to IT services and processes.
- Here are 7 steps of CSI:
    1. Identify the Strategy for Improvement
    2. Define What You Will Measure
    3. Gather the Data
    4. Process the Data
    5. Analyze the Data and Information
    6. Present and Use the Information
    7. Implement Improvement
- **Identify the Strategy for Improvement**: Define what you want to improve and align the improvement efforts with business objectives and goals.
- **Define What You Will Measure**: Determine the metrics and key performance indicators (KPIs) that will help measure the success of the improvements. This step involves understanding what data is needed and how it will be collected.
- **Gather the Data**: Collect the relevant data from various sources. Ensure that the data is accurate, reliable, and complete. This step may involve automated tools, manual processes, or a combination of both.
- **Process the Data**: Convert the raw data into a format that can be analyzed. This may include sorting, filtering, and summarizing the data to make it more manageable.
- **Analyze the Data and Information**: Examine the processed data to identify trends, patterns, and areas for improvement. This step helps to uncover the root causes of issues and understand the impact of the current processes and services.
- **Present and Use the Information**: Share the analysis results with stakeholders and decision-makers. Present the findings in a clear and concise manner, using reports, charts, and presentations. Use the information to make informed decisions about the improvements.
- **Implement Improvement**: Develop and execute a plan to implement the identified improvements. Monitor the progress and measure the success of the changes. Ensure that the improvements are embedded into the organization's processes and are sustainable.

Benefits of ITSM

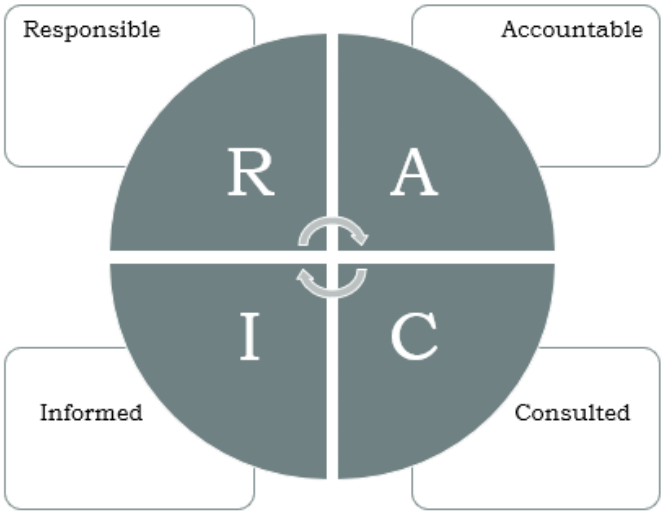
- Improved Service Quality
- Increased Efficiency
- Enhanced Customer Satisfaction
- Better Decision-Making
- Cost Optimization

Basic concept of ITIL4

- Service Value System (SVS)
- Service Value Chain (SVC)
- Guiding Principles
- Four Dimensions of Service Management
- Service Value System (SVS) Components
- ITIL Practices
- Continual Improvement

RACI

- RACI is a responsibility assignment matrix used ITIL
- this is used for defining roles & responsibilities for any task or activities within a process.



RACI means:

- R = Responsible
  - the person who does the task.
- A = Accountable
  - the person who owns the task & is answerable
- C = Consulted
  - People who provide input or expertise before a decision is made.
- I = Informed
  - People who need updates but do not contribute directly

Why to use RACI?

- ✓ avoids the confusion about who is responsible for what.
- ✓ ensures accountability & smooth communication
- ✓ prevents the bottleneck issue in ITIL

Alternatives of RACI

1. DACI - Driver, Approver, Contributor, and Informed
2. RASCI - Responsible, Accountable, Supportive, Consulted, and Informed

DACI

- it’s a decision-making framework
- this helps in clarifying the roles & responsibilities for the whole team.
- DACI means:
    - D = Driver
    - A = Approver
    - C = Contributor
    - I = Informed
- Details
    - Driver = the person who is responsible for driving the decision-making process forward.
    - Approver = is the person with the final authority to approve the decision
    - Contributor = people who provide expertise, input or recommendations
    - Informed = people who needs to be updated about the decision but don't participate actively.
- Why to use DACI
    - ensures structured & efficient decision-making
    - helps avoiding confusion over WHO MAKES THE FINAL CALL.
    - less/no delays

RASCI:

- it’s an extension of RACI
- with an extra SUPPORTIVE (S) in it.
- RASCI means:
- R = Responsible
    - the person who does the task.
- A = Accountable
    - the person who owns the task & is answerable
- S = SUPPORTIVE
    - the person who assists in completing the task.
- C = Consulted
    - People who provide input or expertise before a decision is made.
- I = Informed
    - People who need updates but do not contribute directly

Why to use RASCI?

- adds clarity by defining who helps in the task

- Ensures smoother teamwork

- improves efficiency by avoiding overload on a single person

Aspect	ITIL v3	ITIL v4
Approach	Process-based	Value-driven
Framework structure	26 processes under 5 service lifestyle stages	SVS & SVC
Key Components	Service strategy, service design, service transition, service operation & CSI	Guiding principles, governance, SVC, continual improvement
Processes vs practises	Process-focused	34 practices categorized under general, service & technical management
4th dimensional service management	NA	4 dimensions were introduced here: organizations & people, information & technology, partners & suppliers, value streams & processes.
Change management	Term used: change management	Renamed to Change Control
Continual vs continuous improvements	Continual service improvements (CSI)	Continuous improvement
Certification	Lifecycle & modules	Foundation → Managing Profession (MP) → strategic leader (SL)

Service Level Management (SLM)

- SLM ensures that agreed-upon service levels are met by managing & monitoring performance and SLA.
- Ensures customer expectations
- Monitoring, measuring & reviewing reports for performance regularly.
- We work closely with other ITIL practices like incident management, change control & problem management.

Service Level Agreement (SLA)

- It's a formal contract between service provider and customer.
- Focuses on documentation service commitments like availability, performance & response time.
- Contract-oriented
- Azure → 99.99% SLA

Service Level Management (SLM) → Pizza Delivery

1. Customer orders Pizza → Request service
2. Pizza shop agrees on delivery time → SLA Defined
3. Pizza is delivered late → SLA Violation
4. Customer gets compensation → SLA compliance & improvement

Change Control (aka change management)

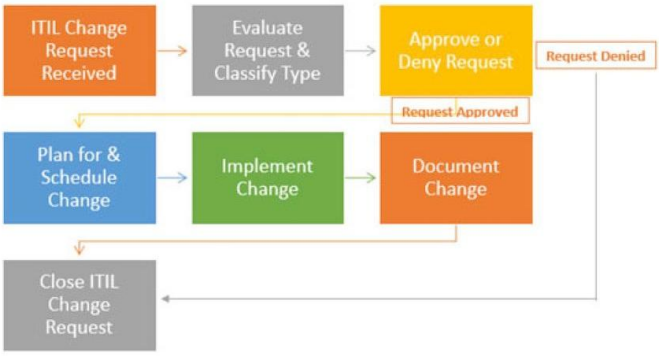
- It's a process of managing the changes to an IT infrastructure, system, applications or services in a controlled & systematic manner.
- The goal here is to minimize the risk of disruption.
- Change control involves:
    - Assessing proposed changed
    - Prioritizing changes based on impact & urgency
    - Implementing changes
    - Evaluating their effectiveness.

Key aspects of change management/control in ITIL:

- Change control process
- Change types
- CAB (Change Advisory Board)
- Change model & template
- Change authorization & approval
- Change implementation & review
- Post-Implementation Review (PIR)

Change management flow / process:

- Request for change (RFC)
- Initial assessment
- Change evaluation
- Change approval
- Change planning
- Change implementation
- Change review & closure
- Change communication & documentation



Change management flow / process – EASY WAY:

- ✓ Request for change (RFC) is raised
- ✓ Change is assessed
- ✓ Approval is granted
- ✓ Change is implemented
- ✓ Post-implementation review is conducted.

Service Management:

- It refers to the set of practices, process & capabilities used to design, deliver, manage & improve IT services.
- It ensures efficient service delivery
- It focuses on value creation
- It includes people, processes, technology & partners
- It helps in balancing cost, risks & service performance

Service Management components (4 dimensions):

- Organization & people – ensuring the right skills & culture
- Information & technology – using IT to enable service delivery
- Partners & suppliers – managing 3rd party service providers
- Value streams & processes – defining workflows to optimize service delivery

Key ITIL practices under service management:

- Incident management – handling services disruptions effectively.
- Problem management – identifying & resolving root cause of issue.
- Change control – ensuring smooth transitions for service changes
- SLM – defining & monitoring service expectations
- Service request management – managing user requests effectively.

Event management:

- Event management is the ITIL practice responsible for monitoring IT services & infrastructure to detect, analyze & respond to events.
- It helps in preventing service disruptions by identifying potential issues early.
- An event is any change in the state of an IT service, that is important for service management.
- Types of events
    - *Informational*
        - Normal operations, no action needed
    - *Warning*
        - Potential service impact, may be attention is needed
    - *Exception*
        - Action is REQUIRED

Event management process:

- *Event detection* – any monitoring tool identifies an event (for ex: CPU spike)
- *Event logging* – the event is recorded for analysis
- *Event classification & filtering* – determine if it's informational, warning, exception
- *Event correlational & analysis* – identifies patterns & relationships to predict issues
- *Event response & action* – resolve, escalate or trigger an automated response
- *Closure & review* – ensure that the event is resolved & documented for the future improvements.

Key components of event management:

- Monitoring tool
    - Nagios (free, Paid)
    - SolarWind
    - Splunks
- Event correlation engines
    - Analyze event patterns
    - Identify root cause
- Automation and AI
    - Automated alerts
    - Self-healing scripts
    - AI-Driven analysis

Benefits of event management:

- Proactive issue detection – reduces downtime by identifying problems early.
- Improved service availability – ensures IT systems remain operational
- Efficient resources utilization – prevents unnecessary escalations & manual interventions
- Supports incident & problem management – helps in quick resolution & root cause analysis (RCA)

Incident management:

- Incident management is the ITIL practice responsible for restoring normal service operations as quickly as possible after an unplanned disruption occurred to minimize business impact.
- An incident is any unplanned interruption in service. For ex:
    - Server crash
    - Application failure
    - Network outage
- Objectives of incident management:
    - Restore service quickly
    - Ensure proper incident logging, classification & resolution happens
    - Improve user experience
    - Enable efficient communication
    - Identify patterns and trends

Incident management Process:

1. Incident identification
    a. An incident is reported by user, IT team, monitoring tool
2. Incident logging
    a. Details timestamp, affected services, severity & user impact are recorded
3. Incident categorization
    a. Category based on
        i. Network
        ii. Application
        iii. Hardware
        iv. Security
4. Incident prioritization

    a. Incidents are assigned a priority based on urgency & impact

Priority Level	Type	Description	Response time
P1	Critical	Major impact, needs to be resolved asap	Within minutes
P2	High	high impact, but workaround possible	Few hours
P3	Medium	Moderate impact, affects few users	Few days
P4	Low	Minor issues, does not affect business	Next available slot

5. Incident diagnosis & investigation
    a. IT team analyzed logs, symptoms or error messages to find root cause
6. Incident resolution & recovery
    a. Temporary or permanent fix
7. Incident closure
    a. Verified by the user & marked as resolved
    b. Post-incident review (PIR) is conducted

Roles & Responsibilities in Incident Management

Role	Responsibilities
End-User	Reports incidents via helpdesk, email, or self-service portal
Service Desk (L1 Support)	First-line response, logs and categorizes incidents, provides basic troubleshooting
Technical Support (L2/L3)	Handles escalated issues, applies advanced troubleshooting, resolves complex incidents
Incident Manager	Monitors and coordinates the incident resolution process, ensures SLAs are met
Major Incident Team	Addresses critical incidents (P1), coordinates across teams for rapid resolution

Benefits of Incident Management

- Faster recovery of services and reduced downtime.
- Improved IT efficiency through structured workflows.
- Enhanced user satisfaction by ensuring quick resolution.
- Better visibility and reporting for IT teams.
- Supports Problem Management by identifying recurring issues.