**ITIL**
C G Narayanan, Anamika Kumari

Information Technology Infrastructure Library is a set of practices highlighting the best ways it can deliver the highest quality IT services. ITIL also helps with:

- Managing business risks
- Strengthening customer relationships
- Establishing cost-effective practices
- Creating a stable IT environment and much more

**itil version 1 started in 1980s**
(itil was developed by CCTA(Central Computer and Telecommunications Agency) now called as OGC(Office of Government Commerce) in total of 60 books in order to effectively utilize it resources.

**itil version 4 (2019)** flexible, and holistic(view from all dimensions), introduced service value system

**What are the 4 Ps of ITIL?**

- **People**: These represent the individuals who are associated with the processes and procedures.
- **Processes**: The company's ability to implement processes are focused on.
- **Products**: These focus on the service itself, along with its underlying technology.
- **Partners**: The partners who work with the IT organization to ensure that the service works properly.

ITIL in today's L1.5 bridges the gap between basic L1 (Level 1) support and more specialized L2 (Level 2) support. why ITIL matters:

- ✓ **1. Structured Incident & Request Management**
- ✓ **2. Enhanced Service Quality & SLAs**
- ✓ **3. Change & Problem Management Integration**
- ✓ **4. Knowledge Management**
- ✓ **5. Collaboration Across Teams**
- ✓ **6. Continuous Improvement (CSI)**

The different stages of the **ITIL life cycle** are:

- **Service strategy**: It provides a plan/ strategy for the overall life cycle of the project. In this stage, it ensures the strategy to be in sync with the business' objectives to ensure that the customers can derive value from the customers.

  The ITIL service lifecycle stage of Service Strategy includes the following main processes:

  - **Strategy Management for IT Services**
  - **Service Portfolio Management**
  - **Financial Management for IT Services**
  - **Demand Management**
  - **Business Relationship Management**

- **Service Design**: This stage involves the design of services and additional components that need to be introduced into the live environment.

  The following ITIL terms are used in ITIL Design Coordination to represent process outputs and inputs:

  - **Service Design Package (SDP)**

    The Service Design Package builds upon the Service Level Requirements. It further specifies the requirements from the viewpoint of the client and defines how these are actually fulfilled from a technical and organizational point of view

  - **Service Design Policy**

    The Service Design Policy provides guidance on how to ensure that a consistent approach is applied to all design activities. In particular, the Service Design Policy specifies which projects or Changes are required to undergo the formal Service Design stage, and who needs to be involved in Service Design to ensure that all relevant aspects are considered.

- **Service Transition**: In this phase, IT services are built and deployed. It also ensures that changes to the service and service management process happen in

a coordinated manner.

The ITIL service lifecycle stage of Service Transition includes the following main processes:

- **Change Management** (The primary objective of Change Management is to enable beneficial Changes to be made, with minimum disruption to IT services.)
- **Change Evaluation**
- **Project Management (Transition Planning and Support)** (To plan and coordinate the resources to deploy a major Release within the predicted cost, time and quality estimates.)
- **Application Development**
- **Release and Deployment Management** (To plan, schedule and control the movement of releases to test and live environments.)
- **Service Validation and Testing** (ensure that deployed Releases and the resulting services meet customer expectations, and to verify that IT operations is able to support the new service.)
- **Service Asset and Configuration Management** (maintain information about Configuration Items required to deliver an IT services.)
- **Knowledge Management** (gather, analyze, store and share knowledge and information within an organization.)

- **Service Operations:** focus on making sure that the expectations of the end-user are met, making sure that costs and potential issues are managed.
- **Continual Service Improvement:** involves quality management to learn from previous losses and successes. With this, the effectiveness and efficiency of IT processes and services can be improved.

## ITIL 4's SVS(Service value System)

ITIL 4's Service Value System represents a fundamental shift in emphasis away from the management of IT services and toward the creation of business value by the IT organization and its partners.

**key activities of the itil 4 service value system**

1. Plan
2. Engage
3. Design and transition
4. Obtain/build
5. Deliver and support
6. Improve

### component of itil 4 SVS:

**1. Guiding principles** (recommendations that can help an organization in any scenario, regardless of the aim, goal, strategy, type of work, management, or structure)
**2. governance** (It aims every investment the organization makes to create value and to ensure that they meet business objectives.)
**3. Service value chain** (model used for creating, delivering, and continually improving services.)
**4. Practice** (These are a collection of organizational resources that focus on performing some specific work or on fulfilling an objective.)
**5. Continual improvement**
**6. Opportunity/ demand**

### 4 dimensions of service management

1. Organizations and people (focus on the people within the organization, their roles, responsibilities)
2. Information and technology (focus on technologies and information that are used in the delivery of services. It includes hardware, software, networks, and information infrastructure. )
3. Partners and suppliers
4. Value streams and processes (focuses on the end-to-end flow of activities that deliver value to the customer. It includes the processes, workflows, and activities that are used to create and deliver services.)

**CAB** (change advisory board)

# SVC:

The service value chain is an operating model that lists the activities necessary to create value with a product or service

**itil 4 service value chain**

plan
improve
engage (Interacts with stakeholders to define needs.)
design and transition

obtain/build
deliver & support

**ITIL in Agile:** Agile is a methodology that emphasizes iterative development, customer collaboration, and the ability to adapt to change.

## ITIL Service Support Process

### 1. Change Management:

Definition of a change and request for change (RFC).
A change is the addition, modification, or removal of anything that could have a direct or indirect effect on services

types of Changes:

- ***Standard Changes****:* Pre-authorized, low-risk Changes that follow a well-known procedure.
- ***Emergency Changes:*** Changes that must be implemented immediately, for example to resolve a Major Incident.
- ***Normal Changes:*** All other Changes that are not Standard Changes or Emergency Changes.

**How does the change control process work?**
step1- Documenting the change request.

Step 2- Formal assessment.
step 3- Planning.
step 4- Designing and testing

Step 5- Implementation and review.
step 6- Final assessment.

### 2. Incident Management:

Definition of an incident, description of Incident.
**describe:**
Design an Incident practice for different type of Incidents

Prioritize Incidents

Use robust tool to log & manage incidents

## 3. Problem Management:

Definition of a problem and known error, proactive problem.
The phases of problem management are:

- Problem identification
- Problem control (Prioritize and manage based on risks)
- Error control (Manage Known errors)

## 4. Service Desk:

The Service Desk is the initial point of contact with the IT organization for users. The major task of the Help Desk was recording, resolving and monitoring problems.
it provides a single point of contact for customers.

**ServiceDesk process:**

- Receiving, recording, prioritising and tracking service calls
- Monitoring and status tracking of all registered calls
- Escalation and referral to other parts of the organizations
- Reporting about calls and quality of the desk
- First Line of Support (not for call centre)
- Keeping the customers informed on request status and progress
- Monitoring and escalation procedures relative to the appropriate SLA
- Communicating planned and short-term changes of Service Levels to customer's
- Co-ordinating 2nd line and 3rd part support groups
- Providing Management information and recommendations for service improvements
- Highlighting customer training and educational needs
- Closing Incidents and conformation with the customer
- Contribution to Problem identification

## 5. Configuration Management:

Defining a configuration item and the configuration management database

## 6. Release Management:

definition of definitive software library (DSL) and definitive hardware store (DHS); description of planning, testing and implementing.

## Service Level Agreement:

A documented agreement between service provider and customer that identified services required and expected level of service.

**types of SLAs?**

**Corporate SLAs** cover the issues relevant to the organization.

**Customer SLAs** refer to issues specific to the customers.

**Service SLAs** deal with issues relevant to a specific service (in relation to the customer) that can be covered. Applies to all customers that contract the same service.

## Service Request Management:

A service request is a request for IT service access, changing a standard, information, or advice. The service request usually covers things that have already been approved by company policy and don't require any new additional permissions.

**standard changes that may be required include:**

-Request for a Service delivery action

-Request for information

-Request access to a resource or service

-Feedback compliments and complaints

**Service Request Management - Guidelines include:**

-Standardize and automate to greatest degree.

-Set policies streamlining service requests with limited or no additional approvals.

-Manage user expectations to what organization can deliver.

-Identify opportunities for improvement to produce faster fulfilment times

-Set policies and workflows to redirect requests which should be managed as incidents or changes

-Some service requests can be automated.

A **knowledge management system** (KMS) harnesses the collective knowledge of the organization, leading to better operational efficiencies. These systems are supported by the use of a knowledge base. They are usually critical to successful knowledge management, providing a centralized place to store information and access it readily.

**Key aspects of knowledge management:**

**Identifying Knowledge:** Recognizing and understanding the different types of knowledge within an organization(documented information, skills and experiences)

**Creating Knowledge:** Developing new knowledge through research, learning, and innovation processes

**Capturing Knowledge:** Documenting and storing knowledge in a structured way

**Organizing Knowledge:** Categorizing and structuring knowledge for easy retrieval and access

**Storing Knowledge:** Maintaining a central repository for knowledge assets, like a knowledge base or intranet

**Sharing Knowledge:** Disseminating knowledge through various channels like training, documentation, and collaboration platforms

**Utilizing Knowledge:** Applying knowledge to solve problems, make decisions, and improve processes

**Benefits of Knowledge Management:**

- Improved Decision-Making
- Increased Efficiency
- Enhanced Innovation
- Reduced Costs
- Better Customer Service
- Employee Retention
- Preservation of Institutional Knowledge

**Event management** is the process of planning, organizing, and executing various types of events, both personal and professional, to achieve specific goals.

**Key Aspects of Event Management:**

- **Planning:** This involves defining the event's objectives, target audience, budget, and timeline
- **Organization** putting the plan into action
- **Execution** overseeing all activities, managing any unexpected issues, and ensuring everything runs smoothly.

**Post-Event Analysis** evaluates its success, gathers feedback, and analyze results to improve future events.

**Release management** is the systematic process of planning, scheduling, testing, and deploying software releases. It ensures that deployment services evolve alongside customer needs with efficient delivery of applications while maintaining the integrity of the production environment.

**Core Components of Release Management:**

- **Planning:** Defining the scope, timeline, and resources for a release.
- **Scheduling:** Establishing a clear schedule for development, testing, and deployment activities.
- **Coordination:** Ensuring that different teams (development, testing, operations) are aligned and working together effectively.
- **Control:** Implementing processes to manage changes, track progress, and mitigate risks throughout the release lifecycle.

**PDCA** has four steps:

1. **Plan** - Identify the problem or opportunity and determine a process for improvement.
2. **Do** - Implement the process changes and collect data to measure the results.
3. **Check** - Analyze the data to determine if the change had a positive impact.
4. **Act** - If the change was successful, standardize the change and implement it on a larger scale. If it is not successful, make further changes and repeat the cycle.

# ITSM:

ITSM, or IT Service Management, refers to the practice of managing IT services to align with business needs and ensure they are delivered effectively and efficiently. It's a strategic approach to designing, delivering, managing, and improving IT services.

**Key aspects of ITSM:**

- Focus on end-user needs
- Process-oriented
- Continual improvement
- Alignment with business goals
- Service delivery as a core principle

**ITSM Frameworks**

- ITIL (Information Technology Infrastructure Library)
- COBIT (Control Objectives for Information and Related Technologies)

ISO/IEC 20000 (international standard)

MOF (Microsoft Operations Framework)

**Benefits of ITSM:**

- Improved service quality
- Enhanced customer satisfaction
- Reduced downtime and faster incident resolution
- Better resource utilization
- Compliance and risk management

**Key components of ITSM:**

Incident Management

Problem Management

Change Management

Service Request Management

Configuration Management

# ServiceNOW:

ServiceNow is a cloud-based platform, which was mainly developed for workflow and process automation as per the **ITIL principles.** ServiceNow was founded in **2004 by Fred Luddy**. It has a unique way for naming its versions. They name the versions based on the major cities of the world. The latest version of ServiceNow is **Orlando**.

ServiceNow offers many ready to use solutions, workflows and products for an organisation. The organisation can develop the customised applications and modules as per the business requirement using the ServiceNow scripting and existing tools.
ServiceNow is built using Java and Tomcat web server running on Linux. Although to develop new modules and applications in ServiceNow the JavaScript knowledge is sufficient.

### Services of ServiceNow

-IT Service management

-HR management

-IT Asset management

-Finance operation management

A **ServiceNow instance** is a set of databases, applications, virtual machines, libraries grouped together to provide the required services to a specific customer.

Each customer has a separate customised application(s) along with separate database(s) running on shared hardware resources. The customer data is encrypted and therefore, is completely secure. The deployment of ServiceNow is very flexible and it can also be implemented in a private cloud.

## Service Now UI:

components in the UI are -

**Banner frame**

The banner frame has a logo, setting options, user profile, global search bar, and option to toggle between conversation and help in the right side bar

**Application navigator**

The Application navigator allows us to browse through all the applications and modules under the applications. We can give the name of application or module in the navigation filter and ServiceNow will automatically show us all the matching applications and modules

**Sidebar**

The sidebar is not provided by default. The user has to activate it from the banner frame. The sidebar can either display the conversations or the help options. Using the conversation feature, we can chat with fellow colleagues and browse through chat history. The Help option allows us, to refer to the support articles which are added by administrators.

**Content frame**

The content frame is the centre part of ServiceNow portal, which lists the entire content of applications and modules. This also contains the centralised menu of the applications, which are important from the administration point of view. Below, are the samples of content frame displaying centralised menu and displaying content of the open module in incident application.