IT infrastructure Overview

Infrastructure relates to the basic physical and organizational infrastructure required for a society or industry to function. Infrastructure in the context of technology often refers to the combination of software, hardware, and network components required to enable the operation of an information system.

What is ITIL?

ITIL is an abbreviation of **Information Technology Infrastructure Library**.

It is a framework which helps the IT professionals for delivering the best services of IT. This framework is a set of best practices to create and improve the process of ITSM (IT Service Management). It provides a framework within an organization, which helps in planning, measuring, and implementing the services of IT.

Why ITIL?

Following are the various reasons which allow the IT and Business managers to use this method:

- It is used to enhance the resource and capabilities.
- It is used for planning the processes with particular goals in mind.
- It helps in integrating business and service strategies.
- It also helps to control the IT budget and investment.
- This framework also helps in changing the organizational culture.
- It also helps in developing the IT and business partnerships.
- It also offers the maximum values to the customers.
- It also improves the relationship with the costumers by delivering the services.
- It also offers the good management of services.
- It also helps in measuring, optimizing, and monitoring the performance of the service provider.
- It allows them to define the roles for each task.
- It manages the service failure.
- It helps managers by providing the service which is reliable and useful

Important Terms used in the ITIL

There are various following terms used in the ITIL which are required to learn:

1. Capabilities:

Capability or capacity is the level of strength of the services and infrastructure of IT. It is an intangible asset of any organization or business.

2. Resources:

It is a term that includes the people, infrastructure, money, applications, etc which may help in delivering IT services.

3. Baseline:

It is referred to as a (starting) initial point of a service or project. In this framework, it is used for measuring how the operations of IT are performing.

4. Process:

This term is a set of activities, which are designed to perform a particular objective. It accepts one or more defined inputs and transforms them into an output which is defined. Process is a term which is triggered by the particular events.

5. Service

It is a means of delivering the values to the customers by achieving the customer's result without defining the costs and risks. Sometimes, this term is also a synonym for IT service, service package or core service.

6. ITIL Role

Role is a term, which is a collection of specific activities, authorities, and responsibilities granted to an individual or team.

7. Business Case:

The business case is a term describing the expected expense and profit which can be achieved as the result of a change.

8. Function:

In ITIL framework, function is a group of tools and people which is used to perform one or more activities or processes.

9. Process Owner:

A Process Owner has a responsibility to manage the overall performance, design, integration, improvement of a single process.

10. Process Manager:

In large organizations, there are separate Process Manager and Process Owner for the better management. In any organization, the role of a Process Manager is to manage the processes operationally.

Service Lifecycle in ITIL

The ITIL framework is completely based on the lifecycle of a service. The lifecycle of IT Service Management is also called as a 'Plan-Do-Check-Act (PDCA)' or 'Deming Cycle'. It helps the service providers to achieve a better understanding of its structure. It also defines the process that how the services are started and maintained.

The lifecycle of a service in the framework of ITIL is broadly classified into the following five stages:

1. Service Strategy
2. Service Design
3. Service Transition
4. Service Operations
5. Continual Service Improvement

Service Strategy

Service Strategy is the first and initial stage in the lifecycle of the ITIL framework. The main aim of this stage is that it offers a strategy on the basis of the current market scenario and business perspective for the services of IT.

This stage mainly defines the plans, position, patters, and perspective which are required for a service provider. It establishes the principles and policies which guide the whole lifecycle of IT service.

Following are the various essential services or processes which comes under the **Service Strategy** stage:

- o Financial Management
- o Demand Management
- o Service Portfolio Management
- o Business Relationship Management
- o Strategy Management

Strategy Management:

The aim of this management process is to define the offerings, rivals, and capabilities of a service provider to develop a strategy to serve customers.

According to the version 3 (V3) of ITIL, this process includes the following activities for IT services:

1. Identification of Opportunities
2. Identification of Constraints
3. Organizational Positioning
4. Planning
5. Execution

Following are the three sub-processes which comes under this management process:

1. Strategic Service Assessment
2. Service Strategy Definition
3. Service Strategy Execution

Financial Management:

This process helps in determining and controlling all the costs which are associated with the services of an IT organization. It also contains the following three basic activities:

1. Accounting 2. charging 3. Budgeting

Following are the four sub-processes which comes under this management process:

1. Financial Management Support
2. Financial Planning
3. Financial Analysis and Reporting
4. Service Invoicing

Demand Management

This management process is critical and most important in this stage. It helps the service providers to understand and predict the customer demand for the IT services. Demand management is a process which also work with the process of Capacity Management. Following are basic objectives of this process:

- o This process balances the resources demand and supply.
- o It also manages or maintains the quality of service.

According to the version 3 (V3) of ITIL, this process performs the following 3 activities:

1. Analysing current Usage of IT services
2. Anticipate the Future Demands for the Services of IT.
3. Influencing Consumption by Technical or Financial Means

Following are the two sub-processes which comes under this management process:

1. Demand Prognosis
2. Demand Control.

Business Relationship Management

This management process is responsible for maintaining a positive and good relationship between the service provider and their customers. It also identifies the needs of a customer. And, then ensure that the services are implemented by the service provider to meet those requirements.

This process has been released as a new process in the ITIL 2011.

According to the version 3 (V3) of ITIL, this process performs the following various activities:

- o This process is used to represent the service provider to the customer in a positive manner.
- o This process identifies the business needs of a customer.
- o It also acts as a mediator if there is any case of conflicting requirements from the different businesses.

Following are the six sub-processes which comes under this management process:

1. Maintain Customer Relationships
2. Identify Service Requirements
3. Sign up Customers to standard Services
4. Customer Satisfaction Survey
5. Handle Customer Complaints
6. Monitor Customer Complaints.

Service Portfolio Management

This management process defines the set of customer-oriented services which are provided by a service provider to meet the customer requirements. The primary goal of this process is to maintain the service portfolio.

Following are the three types of services under this management process:

1. Live Services 2. Retired Services 3. Service Pipeline.

Following are the three sub-processes which comes under this management process:

1. Define and Analyse the new services or changed services of IT.
2. Approve the changes or new IT services
3. Service Portfolio review.

Service Design

It is the second phase or a stage in the lifecycle of a service in the framework of ITIL. This stage provides the blueprint for the IT services. The main goal of this stage is to design the new IT services. We can also change the existing services in this stage.

Following are the various essential services or processes which comes under the Service Design stage:

- o   Service Level Management
- o   Capacity Management
- o   Availability Management
- o   Risk Management
- o   Service Continuity Management
- o   Service Catalogue Management
- o   Information Security Management
- o   Supplier Management
- o   Compliance Management
- o   Architecture Management

Service Level Management

In this process, the **Service Level Manager** is the process owner. This management is fully redesigned in the ITIL 2011.

Service Level Management deals with the following two different types of agreements:

1. Operational Level Agreement

2. Service Level Agreement

According to the version 3 (V3) of ITIL, this process performs the following activities:

- o It manages and reviews all the IT services to match service Level Agreements.
- o It determines, negotiates, and agrees on the requirements for the new or changed IT services.

Following are the four sub-processes which comes under this management process:

1. Maintenance of SLM framework
2. Identifying the requirements of services
3. Agreements sign-off and activation of the IT services
4. Service level Monitoring and Reporting.

Capacity Management

This management process is accountable for ensuring that the capacity of the IT service can meet the agreed capacity in a cost-effective and timely manner. This management process is also working with other processes of ITIL for accessing the current infrastructure of IT.

According to the version 3 (V3) of ITIL, this process performs the following activities:

- o It manages the performance of the resources so that the IT services can easily meet their SLA targets.
- o It creates and maintains the capacity plan which aligns with the strategic plan of an organization.
- o It reviews the performance of a service and the capacity of current service periodically.
- o It understands the current and future demands of customer for the resources of IT.

Following are the four sub-processes which comes under this management process:

1. Business Capacity Management
2. Service Capacity Management
3. Component Capacity Management
4. Capacity Management Reporting

Availability Management

In this process, the **Availability Manager** is the owner. This management process has a responsibility to ensure that the services of IT meet the agreed availability goals. This process also confirms that the services which are new or changed does not affect the existing services.

It is used for defining, planning, and analysing all the availability aspects of the services of IT.

According to the version 3 (V3) of ITIL, this process contains the following two activities:

1. Reactive Activity
2. Proactive Activity

Following are the four sub-processes which comes under this management process:

1. Design the IT services for availability
2. Availability Testing
3. Availability Monitoring and Reporting

Risk Management

In this process, the **Risk Manager** is the owner. This management process allows the risk manager to check, assess, and control the business risks. If any risk is identified in the process of business, the risk of that entry is created in the ITIL Risk Register.

According to the version 3 (V3) of ITIL, this process performs the following activities in the given order:

o   It identifies the threats.
o   It finds the probability and impact of risk.
o   It checks the way for reducing those risks.
o   It always monitors the risk factors.

Following are the four sub-processes which comes under the Risk process:

1. Risk Management Support
2. Impact on business and Risk analysis
3. Monitoring the Risks.
4. Assessment of Required Risk Mitigation