# V20PCA107 - IT INFRASTRUCTURE MANAGEMENT

# UNIT - II_WEEK -4

## Service Level Management

Service Level Management, or SLM, is defined as being "responsible for ensuring that all its service management processes, operational level agreements, and under pinning contracts, are appropriate for the agreed-upon service level targets. Service guarantees exist between IT and other departments in the organization to track hardware or software asset availability and response performance. For example, the IT department might guarantee that a department server will be available 98% of the time and that 99% of the time IT will respond to an outage involving that device within one hour. You can use Service Level Agreements (SLAs) to monitor the performance of Operational Level Agreements (OLAs) in support groups and Underpinning Contracts (UCs) with applicable vendors. The Underpinning Contract (UC) is a contract between an IT service provider and a third party. The third party provides supporting services that enable the service provider to deliver a service to a customer.

The practice of Service Level Management (SLM) gives assurance to the service consumer that a provider will deliver a level of service that meets their needs. Service Level Management is responsible for ensuring that all its service management processes, operational level agreements, and underpinning contracts, are appropriate for the agreed-upon service level targets. SLM monitors and reports on service levels and holds regular customer reviews. In other words, the key criteria for any information to be contained within a Service Level Agreement (SLA) are that it must be measurable, with all language used is clear and concise (brief) to aid understanding. Maintain and improve IT Service quality, through a constant cycle of agreeing, monitoring and reporting upon IT Service achievements and instigation(initiate) of actions to eradicate(eliminate) poor service in line with business or cost justification. PLAN, DO, CHECK, ACT.

**Why is Service Level Management Important?**

Executing **Service Level Management** - processes permit IT staff to more accurately and cost effectively provision identified **levels** of **service** to the business.

The processes ensure business and IT understand their roles and responsibilities and empower (authorize) the business units.

**SLA** - Stands for Service Level Agreement – Signed between the Customer/Client and the Service Provider.

**OLA** - Stands for Operational Level Agreement– The agreement describes the responsibilities of each internal support group toward other support groups, including the process and time frame for delivery of their services. Signed between Business Units/Divisions and Internal IT of the same Organization.

**UC** - Stands for Underpinning Contracts– Signed between Service Provider and the Vendor. The main difference between OLAs and SLAs is that they represent different commitments. The SLA underscores a commitment to the client, while the OLA highlights the commitment to internal groups within the organization.

## Service Level Management Activities

- Identifying business requirements by working with business units. Establishing the scope of services, timeliness, hours of operation, recovery aspects, and service performance Translating business requirements into IT requirements.
- Developing and maintaining a service catalogue, including costs for different tiers of service performance.
- Performing gap analysis between business requirements and available services
- Determining the costs related to services such that service goals satisfy business needs at a price the business can afford
- Drafting, negotiating and refining SLAs with the business units, ensuring business requirements are met and agreement from all parties involved
- Implementing SLAs
- Measuring SLA performance, reporting results and adjusting as necessary.

## Immediate Benefits to Implementing SLM Processes Include:

1. Enabling a better understanding between business units and IT Setting more accurate service quality expectations and effectively measuring, monitoring and reporting service quality.
2. Clearly delineating roles and responsibilities.
3. Providing the necessary flexibility for business to react quickly to market conditions.
4. Creating more accurate infrastructure sizing based on clearly defining service levels.
5. Avoiding or mitigating the costs of excess or insufficient capacity.
6. Providing discipline in supporting internal or external sourcing of IT services.

## What is Service Level Management?

Service Level Management is the process that is responsible for negotiating Service Level Agreements and ensuring that they are met. IT is one of the 5 components of the ITIL service delivery area. The processes under SLM provide a framework upon which the services are defined, the service levels are agreed upon, service level agreements (SLAs) and Operational Level Agreements (OLAs) are developed to fulfil the contracts, and the costs of the services which are under development. What is Service Level Management? The main purpose of service level management is to make sure that every IT service presently being provided and planned is delivered as per the previously agreed upon service level targets.

## The Main Objective of Service Level Management:

The objectives of service level management are to do the following:

• Define, document, agree, monitor, measure, report, and review the level of IT services that are being provided.

• Make sure that the targets which are set are precise and assessable.

• Monitor the levels of customer satisfaction and improve them.

• Improve the relationship between the customers and the business and increase the level of communication.

• Ensure that the expectations of the level of service which will be delivered are clear and unambiguous

• Make sure that there is a constant improvement in all the service levels even after the targets have been met.

## Scope of Service Level Management

The following come under the scope of service level management:

• Service level management represents the service provider to the business and the business to the service provider.

• SLM manages the expectations and perceptions that are held by the businesses, customers, and users and makes sure that the services are provided according to those expectations.

• Its emphasis ranges from the services being presently delivered, the services which are being newly designed or modified to producing and agreeing on the service level requirements for these services.

## Value of Service Level Management

Service Level Management implementation provides several benefits. Some of them are:

• It allows for a better understanding between the IT department and business units.

• SLM provide a consistent channel of communication and a trusted relationship between the customers and the business representatives.

• It provides businesses with the agreed service targets and the necessary information to guarantee that the targets will be met.

• It clearly demarcates the roles and responsibilities.

• It provides the flexibility that businesses require in order to react in time to different market conditions.

• It clearly defines service levels and thus helps to create accurate infrastructure sizing.

• It helps to evade and lessen the costs which come attached with superfluous or inadequate capacity. Principles & Basic Concepts of Service Level Management Service Level Requirements (SLRs) The Service Level Requirements (SLRs) define the requirements of a customer for an IT service based on business objectives, and they are used to negotiate service level agreements (SLAs).

## Principles & Basic Concepts of Service Level Management

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**Service Level Agreements (SLAs)**-A Service Level Agreement (SLA) is an agreement between an IT service provider and a customer. This agreement describes the IT service, documents the service level targets, and specifies the responsibilities of the IT service provider and the customer.
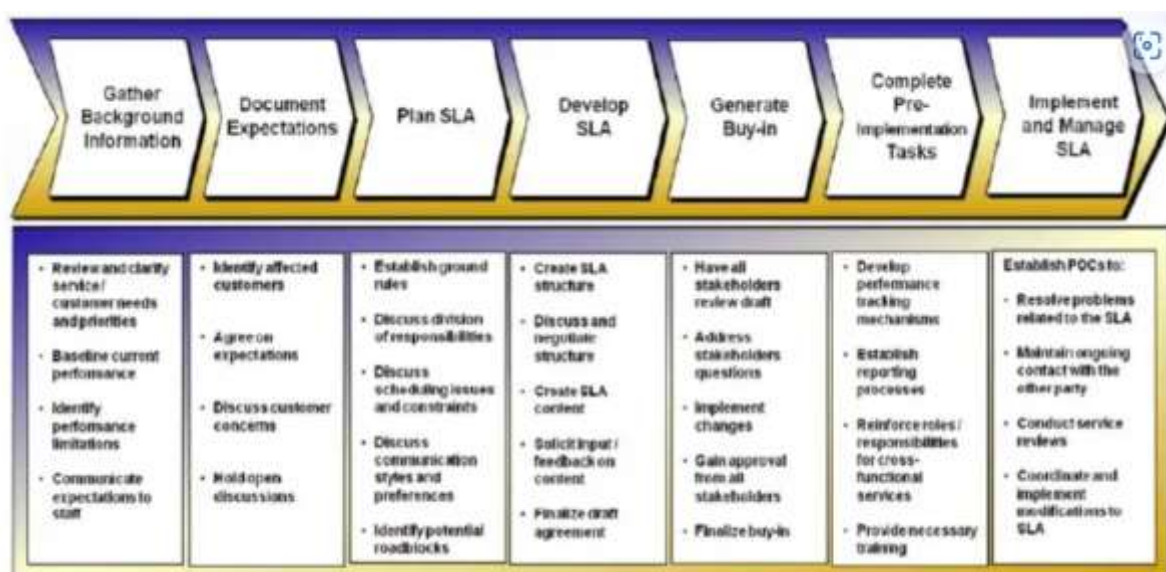


A single agreement can cover multiple IT services or customers. Service Level Agreement Frameworks The options available while designing the SLA frameworks are:

• Service-based SLAs: They describe a specific IT service that must be delivered.

• Customer-based SLAs: They describe all IT services which are delivered to a specific customer.

• Multi-level SLAs: The service level agreements at each level are inherited by those at the next. This makes the SLAs easier to work with as it helps with the ongoing maintenance.

## Service Level Management Process

The process activities of Service Level Management include:

• Designing the framework of the Service Level Agreement (SLA)

• To find out, document, and agree on the business requirements for new services and produce service level requirements.

• Translating the business requirements into IT requirements.

• To negotiate, document, agree, monitor, and report on the service level agreements for operational services.

• Conducting a gap analysis between the requirements for the business and the services which are available.

• Performing service reviews and prompt improvements to an overall service improvement program.

• Measure the performance of the service level agreement, report the results and make the necessary adjustments to maintain the required level of customer satisfaction.

## Implementation Procedure for Service Level Management

Implementation Procedure for Service Level Management.

The following steps are taken to implement Service Level Management in ITIL:

Execute the Plan The steps involved in the execution of the plan are:

• Allocate the proper staff

- Document and publish the process

- Obtain and implement the tools

- Built a service catalogue

- Identify, develop, negotiate and implement SLAs

- Identify the necessary services which are not being provided

- Define the metrics to quantify success

- Build materials for training and execute the training plan.

- Implement the procedures for reporting the processes and procedures Initiate the Ongoing Work of SLM The reporting process should include abilities to alert the SLM team automatically when:

- Services are in danger of missing performance targets because of sudden bottlenecks.

- Services are in danger of missing performance targets because of sudden surges in demand

- The trends show that performance is approaching the agreed-upon limits Post-implementation Review The lessons which are learned should be well-documented so that any changes which should be made to the process to facilitate future process migrations can be identified.

## Risk & Challenges of Service Level Management

The challenges faced in service level management are:

- Identifying the right people and involving them in the customer base while drafting and agreeing to the service level agreements.

- An appropriate service should be selected by the organization if they are new to service level management.

The SLA needs to be agreed upon by both sides. The risks involved in service level management are:

- An absence of accurate input or commitment from the business.

• A lack of the necessary tools and resources is required to execute the process.

• The business and customer measurements which are extremely tough to measure and improve are not recorded.

## ITIL Service Level Management Process Flow Diagram
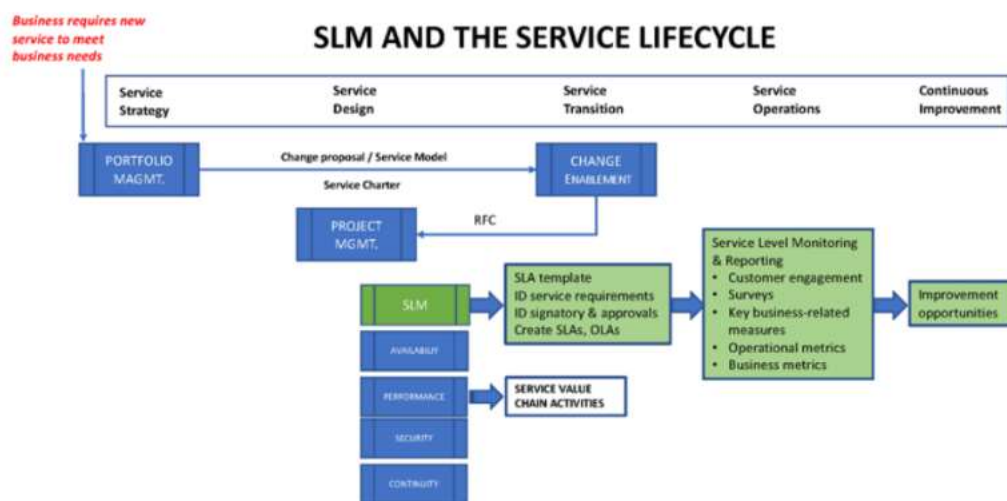


How does SLM convert business needs into valuable services? "To understand SLM, you must understand the full depth of how SLM contributes to the ITIL service lifecycle. In the graphic above, it is easy to see that SLM contributes to four of the five lifecycles: Service Design, Transition, Operations, and Continuous Improvement. I chose this diagram because it describes the beginning when the business requires a new service to support a business strategy.

The business manager cannot just contact Change Enablement because change does not that detail roles and responsibilities that fully support the SLA. "When the new service is operational in the live environment, SLM gathers data to validate performance and user experiences. Any deviations from the planned performance are

opportunities to improve. SLM uses the Continuous Improvement Practice to initiate improvement actions. "Betty, are you still with me?" "Yes. I had no idea that SLM had this much responsibility. It is certainly more than just creating an SLA." "I agree with you, Betty. Now that you understand the big picture let's dive a little deeper." Why Does Every IT Organization Need SLM? "Service Level Management definition: 'The purpose of the SLM practice is to set clear business-based targets for delivery of service levels, and to ensure that IT properly assesses, monitors, and manages against these targets.'2 "These targets are the foundation of a Service Level Agreement (SLA). "'An SLA is a documented agreement between a service provider and a customer that identifies both services required and the expected level of service.'3 According to ITIL, some of the key requirements for successful SLAs include:

Must relate to a defined 'service' in the Service Catalog.

• They should relate to defined business outcomes and not simply operational metrics. The best practice is to use balanced bundles of metrics, such as customer satisfaction and critical business outcomes.

• SLAs should be an agreement (e.g., through engagement and discussions between the service provider, service consumer, including all stakeholders, sponsors, users, customers, and Supplier Management)

• SLAs use simple writing that is easy to understand and use for all parties." The Key to an Effective SLA is OLAs Between All Groups Supporting the SLA "Just to review. The business requires a new service. We start with Service Level Requirements (SLR) from the customer. Before accepting a new or changed service into operations, both customers and providers must agree on the SLA, detailing the service level targets to be achieved and specifying responsibilities of all parties. "Following this, best-practice organizations map out and agree on value streams and processes. Value streams define the activities, workflows, controls, and procedures needed to achieve agreed objectives. "'A value stream is a series of steps that an organization uses to create and deliver products and services to a service consumer.

One of the first value streams to map is when a user needs an incident resolved. Design the value stream options in documentation and train teams to manage and

improve the streams: • What guidance is there for the Service Desk to address different issues and log the incident? • Are knowledge articles available?

• If they cannot resolve the issue at the Service Desk, how do they escalate? (e.g., which functional team(s), how do they document, and the timelines)

• What priorities are available, how are they determined, how do they set user expectations?

• What is the documented workflow?

• Service Desk detailed instructions for linking incidents to problems.

• Problem Management directives for action.

"Now we are ready for a critical element to ensure that SLAs are meaningful, realistic, and provide value. Now we can write OLAs between all the possible functional teams in supporting the new service. "'An Operational Level Agreement (OLA) is an agreement between an IT service provider and another part of the same organization.'5 "OLAs support the IT service provider's delivery of IT services to customers and define the goods or services provided and the responsibilities of both parties. OLAs define the tasks, the order of the actions, communication channels, time frames, inputs, outputs, acceptance criteria, and value creation at each step.

"The OLA between every IT functional team documents how the IT organization works together to support the SLAs. Quite simply put, you will find it nearly impossible to sustain quality support for business services without OLAs. "I wrote a blog on the relationship between SLAs and OLAs. You might want to read it before you visit with the CIO. There are Three Types of SLA Structures in the Service Design stage, SLM will determine the most appropriate type of SLA structure. There are three basic types.

**1.** Service-Based SLA This SLA covers one service for all the customers of that service. Service-based is the easiest to write if delivery capabilities are similar for all customers.

**2.** Customer-Based SLA Customer-based SLA is an agreement with an individual customer group, covering all the services they use.

**3.** Multi-Level SLA This SLA is a hybrid of the other two. For example, the SLA might have three sections.

**Corporate level:** The corporate level part covers all the generic SLA issues appropriate to every customer throughout the organization.

**Customer level:** The customer level part covers all SLA issues relevant to a customer group or business unit, regardless of the service used.

**Service level:** The service level part covers all SLA issues relevant to the specific service delivered to a particular customer group (one for each service covered by the SLA). "Bottom line: Every service offered in the service catalogue must have an SLA. A best practice is embedding a link to the SLA right in the service catalogue record.

# Incident Management

**ITSM and Incident Management**

ITSM (IT service management) is a common approach to creating, supporting, and managing IT services. The core concept of ITSM is the belief that IT should be delivered as a service. And one of the core practices of ITSM is incident management. Incident management is the process of responding to an unplanned event or service interruption to restore the service to its operational state. According to ITIL (IT Infrastructure library), "the incident management process ensures that normal service operation is restored as quickly as possible, and the business impact is minimized." Incidents are events of any kind that disrupt or reduce the quality of service (or threaten to do so).

A business application going down is an incident. A crawling-but-not-yet-dead web server can be an incident, too. It's running slowly and interfering with productivity.

In the incident above where the network is creeping and a business application is down, a misconfigured router could be the underlying problem behind both.

Considering all the software services organizations rely on today, there are more potential failure points than ever. And the impact of an incident can be huge.

Research says major incidents can cost $300,000 for every hour a system is down. For some web-based services, that number can be dramatically higher.

Having a well-defined incident management process can help reduce those costs dramatically. **IT Incident Management Process**

In practice, IT incident management often relies upon temporary work arounds to ensure services are up and running while the staff investigates the incident, identifies its root cause, and develops and rolls out a permanent fix. Specific workflows and processes in IT incident management differ depending on the way each IT organization works and the issue they are addressing. Most IT incident management workflows begin with users and IT staff pre-emptively addressing potential incidents, such as a network slowdown. IT staff contains the incident to prevent potential issues in other areas of the IT deployment. Then, they find a temporary workaround or implement a fix and recovery of the system and release that system back into the production environment. IT staff then reviews and logs the incident for future reference.

Documentation enables IT staff to find previously unseen and recurring incident trends and address them. If a temporary workaround is in place, once the disruption to end users is mitigated, the staff can develop a long-term fix for the issue. A focus on IT incident management processes and established best practices will minimize the duration of an incident and shorten recovery time, and it can prevent future issues.

A common framework to understand IT incident management is through analysing the ITIL process. ITIL, trademarked by Axelos, is a widely used ITSM framework. ITIL incident management uses a workflow for efficient resolution: incident identification, logging, categorization, prioritization, response, diagnosis, escalation, resolution and recovery, and then closure.

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- ❑ Incident response tools correlate that monitoring data and facilitate response to events, typically with a sophisticated escalation path and method to document the response process.
- ❑ ITSM service desk tools log data such as what the incident was, it's cause and what steps were taken to solve the incident.
- ❑ ServiceNow Incident Management is a root cause analysis and auditing tool that can both log and prioritize IT incidents. ServiceNow can prioritize incident events through a self-service portal, email, incoming events and more.

**The benefits of a Well-Defined Process Include:**

⬚ Faster incident resolution

⬚ Reduced costs or revenue losses for the organization resulting from incidents

⬚ Better communication — both internal and external — during incidents

⬚ Continuous learning and improvement

# Financial Management for IT Services

Financial Management means planning, organizing, directing and controlling the financial activities such as procurement and utilization of funds of the enterprise. It means applying general management principles to financial resources of the enterprise.

Financial management for IT services consists of financial models and practices which enable us to calculate the value of the services. It includes the core concepts such as funding, accounting, and budgeting. Funding refers to the sourcing and allocation of money for specific purposes such as design, transition, operation, and improvement of IT services. Funding can be of 2 types; **External and Internal.**

**External funding** comes from the revenue received from selling IT services to external customers, and **Internal funding** comes from selling IT services to business units within the IT service provider's organization

## Purpose of Financial Management for IT Services

The purposes of financial management for IT services are as follows:

• To provide operational visibility, insight and superior decision-making capabilities to the organization.

• To make sure that the IT service provider does not commit to a service which they are not able to deliver.

• To get the appropriate level of funding for the design, development, and delivery of IT services which are required to support the service strategy.

• To identify the perfect balance between service cost and quality, supply, and demand.

## Objectives of Financial Management for IT Services

There are several objectives of financial management for IT services. Some of them are:

• Defining and maintaining a framework to:

  - Secure the funding to manage the provision of services
  - Identify, manage and communicate the cost of providing services
  - Recover the costs incurred for providing a service.

• To evaluate the financial impact caused by newly implemented or changed strategies.

• To execute financial policies and practices which are specific to enterprises and IT service providers.

• To account for the expenditure in the development, delivery, and support of services.

• To forecast the financial requirements of the service provider.

## Principles of Financial Management for IT Services

The overall financial management policies and practices of an organization are applied in a tightly aligned manner across all their departments. This usually creates another level of financial management process which is specific to the department's governance requirements. At the same time, it continues to conform to the overall financial management process of the organization. The following terminology distinctions are used by ITIL to recognize multiple levels of financial processes:



- Financial Management: A generic use of the term for the purpose of managing finances.
- Enterprise Financial Management: It refers to the overall financial management process of the organization as used by the financial department.
- Financial Management for IT services: It refers to the specific way in which the IT service provider has applied the process.