

Q.1 Attempt any THREE question of the following :

[15]

Q.1(a) What are the benefits of ITSM.

[5]

Ans. : The benefits of applying IT Service Management practices vary depending on the organization's needs, some typical benefits include:

- improved quality service provision
- cost justifiable service quality
- services that meet business, customer and user demands
- integrated centralized processes
- everyone knows their role and knows their responsibilities in service provision
- learning from previous experience
- demonstrable performance indicators.

It is important to consider the range of stakeholders who can benefit from improved ITSM practices.

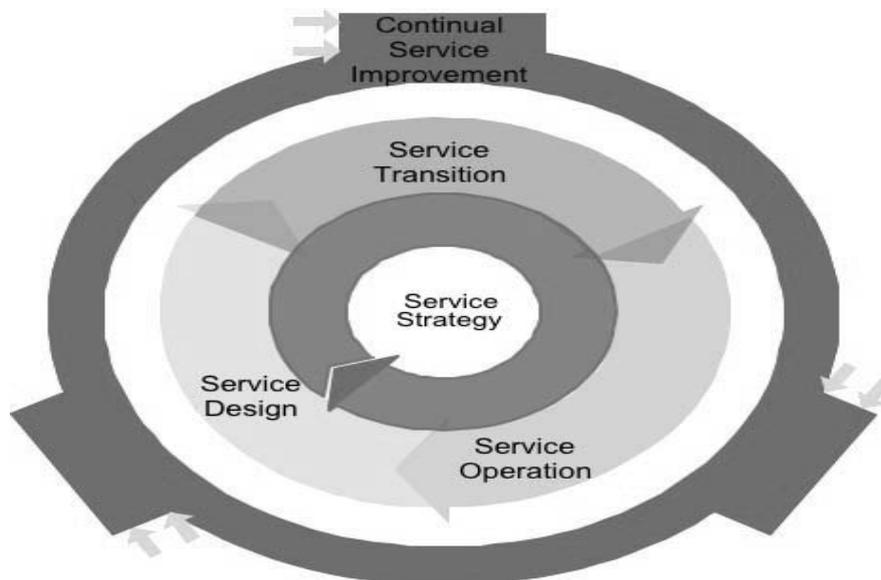
These stakeholders can come from:

- Senior management.
- Business unit managers.
- Customers.
- End users.
- IT staff.
- Suppliers.

Q.1(b) Explain Service Lifecycle in detail with neat diagram.

[5]

Ans. :



Although there are 5 phases throughout the Lifecycle, they are not separate, nor are the phases necessarily carried out in a particular order. The whole ethos of the Service Lifecycle approach is that each phase will affect the other, creating a continuous cycle. For this to work successfully, the Continuous Service Improvement (CSI) phase is incorporated throughout all of the other phases. Figure demonstrates some of the key outputs from each of the Service Lifecycle Phases.

It is important to note that most of the processes defined do not get executed within only one lifecycle phase. As an example:

- **Service Strategy Phase:** Determine the needs, priorities, demands and relative importance for desired services. Identifies the value being created through services and the predicted financial resources required to design, deliver and support them.
- **Service Design Phase:** Designs the infrastructure, processes and support mechanisms needed to meet the Availability requirements of the customer.
- **Service Transition Phase:** Validates that the Service meets the functional and technical fitness criteria to justify release to the customer.
- **Service Operation Phase:** Monitors the ongoing Availability being provided. During this phase we also manage and resolve incidents that affect Service Availability.
- **Continual Service Improvement Phase:** Coordinates the collection of data, information and knowledge regarding the quality and performance of services supplied and Service Management activities performed. Service Improvement Plans developed and coordinated to improve any aspect involved in the management of IT services

Q.1(c) Write a short note on Creating Service Value

[5]

Ans.: One of the key mantras that exist for any modern Service provider (IT or otherwise) is that it is essential to clearly establish value before you can attach a price to the services offered. This ensures a few key things:

- It avoids an apple to oranges comparison, which usually occurs with a price focal point.
- It enables the Service Provider to distinguish their capabilities and differentiation from their competitors.
- It clearly communicates to the customer what they can expect to receive as part of the delivery service.

Providers of IT Services need to take special appreciation of the concept of value creation and communication, due to the many misunderstandings about technology on behalf of customers (and poor communication by their IT providers). To support this need, one of the major elements of the Service Strategy lifecycle is the creation of value through Services and Service Packages

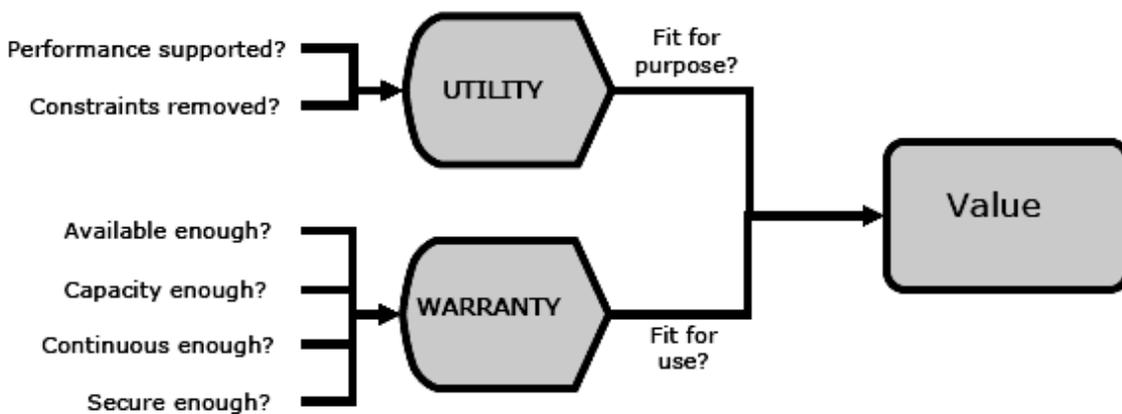


Figure 4.B – Creating Service Value

Service Utility describes the positive effect on business processes, activities, objects and tasks. This could be the removal of constraints that improves performance or some other positive effect that improves the outcomes managed and focused on by the customer and business. This is generally summarized as being fit for purpose.

Service Warranty on the other hand describes how well these benefits are delivered to the customer. It describes the Service's attributes such as the availability, capacity, performance, security and continuity levels to be delivered by the provider. Importantly, the Service Utility potential is only realized when the Service is available with sufficient capacity and performance.

Q.1(d) Write a short note on Service Providers**[5]****Ans.: Service provider types**

Type I - internal business functions embedded within the business units they serve have the benefit of tight coupling with their owner-customers, avoiding certain costs and risks associated with conducting business with external parties

Type II - shared services unit customers are business units under a corporate parent, common stakeholders, and an enterprise-level strategy can offer lower prices compared to external service providers by leveraging corporate advantage, internal agreements and accounting policies

Type III - external can offer competitive prices and drive down unit costs by consolidating demand. Access to knowledge, experience, scale, scope, capabilities, and resources that are either beyond the reach of the organization or outside the scope of a carefully considered investment portfolio. How to choose? transaction costs, strategic industry factors, core competence, and the risk management capabilities.

Q.1(e) Explain 4ps of strategy.**[5]****Ans.: The four Ps of strategy**

Mintzberg (1994) introduced four forms of strategy that should be present whenever a strategy is defined. These are illustrated in Figure 3.2 (after Simons, 1995).

The four Ps are:

- **Perspective** Describes the vision and direction of the organization. A strategic perspective articulates what the business of the organization is, how it interacts with the customer and how its services or products will be provided. A perspective cements a service provider's distinctiveness in the minds of the employees and customers.
- **Positions** Describe how the service provider intends to compete against other service providers in the market. The position refers to the attributes and capabilities that the service provider has that sets them apart from their competitors. Positions could be based on value or low cost, specialized services or providing an inclusive range of services, knowledge of customer environment or industry variables.
- **Plans** Describe how the service provider will transition from their current situation to their desired situation. Plans describe the activities that the service provider will need to take to be able to achieve their perspective and positions.
- **Patterns** Describe the ongoing, repeatable actions that a service provider will have to perform in order to continue to meet its strategic objectives.

A service provider may begin with any one of the four Ps and evolve to another. For example, a service provider might begin with a perspective: a vision and direction for the organization. The service provider might then decide to adopt a position articulated through policies, capabilities and resources. This position may be achieved through the execution of a carefully crafted plan. Once achieved, the service provider may maintain its position through a series of well-understood decisions and action over time: a pattern.

The sequence is not as important as using all four Ps. In this way the strategy is able to be adjusted to enable the service provider to deal with strategies that are already being executed together with those that are just being conceived. It will also ensure that a balance is maintained between the 'big picture' and the detailed execution.

Q.1(f) Define Process and Function.**[5]**

Ans.: Processes can be defined as a structured set of coordinated activities designed to produce an outcome and provide value to customers or stakeholders. A process takes one or more inputs and through the activities performed turns them into defined outputs. Some principles:

- All processes should be measurable and performance driven (not just time, but measuring overall efficiency including cost, effort and other resources used).
- Processes are strategic assets when they create competitive advantage and market differentiation.

- Processes *may* define roles, responsibilities, tools, management controls, policies, standards, guidelines, activities and work instructions if they are needed.

Functions refer to the logical grouping of roles and automated measures that execute a defined process, an activity or combination of both. The functions within Service Operation are needed to manage the 'steady state' operation IT environment. Just like in sports where each player will have a specific role to play in the overall team strategy, IT Functions define the different roles and responsibilities required for the overall design, delivery and management IT Services.

Q.2 Attempt any THREE question of the following : [15]

Q.2(a) State the objectives and aspect of Service Design. [5]

Ans.: While there are many elements within the Service Design phase, the three main objectives that provide direction to the processes involved are:

- To convert the strategic objectives defined during Service Strategy into Services and Service Portfolios.
- To use a holistic approach for design to ensure integrated end-to-end business related functionality and quality.
- To ensure consistent design standards and conventions are followed in all services and processes being designed.

Five Major Aspects of Service Design

An overall, integrated approach should be adopted for the design activities, covering five major aspects of Service Design:

- (i) Service Portfolio:** Service Management systems and tools, especially the Service Portfolio for the management and control of services through their lifecycle.
- (ii) Service Solutions:** including all of the functional requirements, resources and capabilities needed and agreed.
- (iii) Technology architectures:** Technology architectures and management architectures and tools required to provide the service.
- (iv) Processes:** Processes needed to design, transition, operate and improve the service.
- (v) Measurement systems:** Measurement systems, methods and metrics for the services, the architectures and their constituent components and the processes.

Q.2(b) Explain about Service Design Process. [5]

Ans.: The processes included with the Service Design lifecycle phase are:

- Service Level Management (Design)
- Capacity Management
- Availability Management
- IT Service Continuity Management
- Information Security Management
- Supplier Management
- Service Catalogue Management

It is important to note that many of the activities from these processes will occur in other lifecycle phases, especially Service Operation. Additionally, Service Level Management also plays an important role in Continual Service Improvement.

Like all ITIL processes, the level to which the Service Design processes are required to be implemented will depend on many factors, including:

- The complexity and culture of the organization.
- The relative size, complexity and maturity of the IT infrastructure.
- The type of business and associated customers being served by IT.
- The number of services, customers and end users involved.
- Regulations and compliance factors affecting the business or IT.
- The use of outsourcing and external suppliers for small or large portions of the overall IT Service Delivery.

Q.2(c) Explain about the Supplier Management. [5]

Ans.: The primary goal of Supplier Management is to manage suppliers and the services they supply, to provide seamless quality of IT service to the business and ensure that value for money is obtained.

Other objectives include the application of capabilities to:

- Obtain value for money from supplier and contracts.
- Ensure that underpinning contracts and agreements with suppliers are aligned to business needs.
- Manage relationships with suppliers.
- Negotiate and agree contracts with suppliers.
- Manage supplier performance.
- Maintain a supplier policy and a supporting Supplier and Contract Database (SCD).

All Supplier Management process activity should be driven by supplier strategy and policy. In order to achieve consistency and effectiveness in the implementation of the policy, a Supplier and Contract Database (SCD) should be established.

Ideally the SCD should form an integrated element of a comprehensive CMS (Configuration Management System) or SKMS (Service Knowledge Management System), recording all supplier and contract details, together with the types of service, products etc. provided by each supplier, and all the other information and relationships with other associated CIs (Configuration Items). This will also contribute to the information held in the Service Portfolio and Catalogue.

Q.2(d) Explain two types of Service Catalogue. [5]

Ans.: (i) **A Business Service Catalogue**

Contains details of all the IT services defined in the context of customers, together with relationships to the business units and the business process they support. This information is utilized to form the customer view of the Service Catalogue, using appropriate communication (language, use of business terminology, not overly technical) to ensure its effectiveness. In cases where the customer is an IT organization themselves then the technical level of detail provided should be appropriately expanded.

(ii) **A Technical Service Catalogue**

Also contains details of all the IT services delivered to the customer, but by comparison, the Technical Service Catalogue includes records of the relationships that exist with other supporting services, shared services, components and Configuration Items necessary for the delivery of the service to the business. The Technical Service Catalogue should underpin the Business Service Catalogue, and is not always be visible to customers and users, unless specifically requested. In many cases the Technical Service Catalogue itself is formed largely by the information contained within the Configuration Management System

Q.2(e) State the different process of Capacity Management. [5]

Ans.: **Processes of Capacity Management:**

Business Capacity Management

- Manages Capacity to meet future business requirements for IT services
- Identifies changes occurring in the business to assess how they might impact capacity and performance of IT services
- Plans and implements sufficient capacity in an appropriate timescale
- Should be included in Change Management and Project management activities.

Service Capacity Management

- Focuses on managing ongoing service performance as detailed in the Service Level Agreements
- Establishes baselines and profiles of use of Services, including all components and subservices that affect the user experience.

Component Capacity Management

- Identifies and manages each of the individual components of the IT Infrastructure e.g. CPU, memory, disks, network bandwidth, server load
- Evaluates NEW technology and how it might be leveraged
- Balances loads across resources for optimal performance of services.

Q.2(f) Explain about Information Security Management. [5]

Ans.: To align IT security with business security and ensure that information security is effectively managed in all service and IT Service Management activities.

Security objectives are met when:

- Information is available and usable when required, and the systems that provide it can appropriate resist attacks and recover from or prevent failures (availability)
- Information is observed by or disclosed to only those who have a right to know (confidentiality)
- Information is complete, accurate and protected against unauthorized modification (integrity)
- Business transactions, as well as information exchanges between enterprises, or with partners, can be trusted (authenticity and non-repudiation)

Information Security Management ensures that the **confidentiality, integrity and availability** of an organization's assets, information, data and IT services is maintained. Information Security Management must consider the following four perspectives:

- Organizational - Define security policies and staff awareness of these
- Procedural - Defined procedures used to control security
- Physical - Controls used to protect any physical sites against security incidents
- Technical - Controls used to protect the IT infrastructure against security incidents

Information Security Management (ISM) needs to be considered within the overall corporate governance framework. This provides the *strategic* direction for security activities and ensures objectives are achieved. It further ensures that the information security risks are appropriately managed and that the enterprise information resources are used responsibly.

Q.3 Attempt any THREE question of the following : [15]

Q.3(a) Explain different principles of Service Transition [5]

Ans.: Principles of Service Transition

- Policies should clearly state the objectives, and any non-compliance with the policy must be remedied.
- Policies should be aligned with the overall governance framework, organization and service management policies, with appropriate auditing and enforcement. This should include alignment with ISO/IEC 20000, ISO/IEC 38500 and COBIT where these have been adopted.
- Sponsors and decision makers involved in developing the policy must demonstrate their commitment to adapting and implementing the policy. This includes the commitment to deliver predicted outcomes from any change in the services.
- Processes should integrate teams, blending competencies while maintaining clear lines of accountability and responsibility.
- Changes should be delivered in releases, except for standard changes and some emergency changes.
- Deployment must be addressed early in the release design and release planning stages

Q.3(b) Explain about Release and deployment management. [5]

Ans.: Purpose and objectives

The purpose of the release and deployment management process is to plan, schedule and control the build, test and deployment of releases, and to deliver new functionality required by the business while protecting the integrity of existing services.

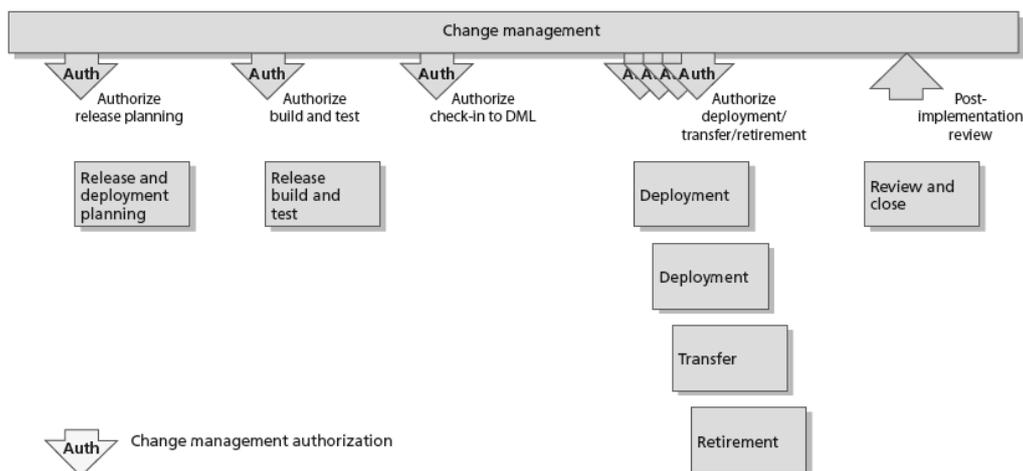
The objectives of release and deployment management are to:

- Define and agree release and deployment management plans with customers and stakeholders

- Create and test release packages that consist of related configuration items that are compatible with each other
- Ensure that the integrity of a release package and its constituent components is maintained throughout the transition activities, and that all release packages are stored in a DML and recorded accurately in the CMS. Deploy release packages from the DML to the live environment following an agreed plan and schedule
- Ensure that all release packages can be tracked, installed, tested, verified and/or uninstalled or backed out if appropriate
- Ensure that organization and stakeholder change is managed during release and deployment activities (see Chapter 5)
- Ensure that a new or changed service and its enabling systems, technology and organization are capable of delivering the agreed utility and warranty
- Record and manage deviations, risks and issues related to the new or changed service and take necessary corrective action
- Ensure that there is knowledge transfer to enable the customers and users to optimize their use of the service to support their business activities.

There are four phases to release and deployment management (see Figure):

- **Release and deployment planning** Plans for creating and deploying the release are created. This phase starts with change management authorization to plan a release and ends with change management authorization to create the release.
- **Release build and test** The release package is built, tested and checked into the DML. This phase starts with change management authorization to build the release and ends with change management authorization for the baselined release package to be checked into the DML by service asset and configuration management. This phase only happens once for each release.
- **Deployment** The release package in the DML is deployed to the live environment. This phase starts with change management authorization to deploy the release package to one or more target environments and ends with handover to the service operation functions and early life support. There may be many separate deployment phases for each release, depending on the planned deployment options.
- **Review and close** Experience and feedback are captured, performance targets and achievements are reviewed and lessons are learned.



Phases of release and deployment management

Release and deployment planning

Most of the planning described here is carried out during the service design stage of the service lifecycle. These activities are carried out as part of the release and deployment management process, and the service design coordination process will ensure that the plans are documented as part of the service design package.

These plans form part of overall service transition plans, and should be coordinated with plans for other activities such as project plans, change management plans etc.

Plans for release and deployment should be based on service models (which show how the service assets should interact with customer assets to create value) and on the documented utility and warranty requirements for the service, as well as on technical data about the components that will make up the new, changed or retired service.

Q.3(c) Explain about Change management.

[5]

Ans. : Changes are made for a variety of reasons and in different ways - for example:

- Proactively, e.g. when organizations are seeking business benefits such as reduction in costs, improved services or increased ease and effectiveness of support
- Reactively as a means of resolving errors and adapting to changing circumstances.

Changes should be managed in order to:

- Optimize risk exposure (supporting the risk profile required by the business)
- Minimize the severity of any impact and disruption
- Achieve success at the first attempt
- Ensure that all stakeholders receive appropriate and timely communication about the change so that they are aware and ready to adopt and support the change.

Such an approach will improve the bottom line for the business by delivering early realization of benefits (or removal of risk) while saving money and time.

An appropriate response to all requests for change entails a considered approach to assessment of risk and business continuity, change impact, resource requirements, change authorization and especially to the realizable business benefit. Risk assessment should consider the risk of not implementing the change as well as any risks that the change might introduce. This considered approach is essential to maintain the required balance between the need for change and the impact of that change.

This section provides information on the change management process and provides guidance that is scalable for:

- Different kinds and sizes of organization
- Small and large changes required at each lifecycle stage
- Changes with major or minor impact
- Changes in a required time frame
- Different levels of budget or funding available to deliver change.

Purpose and objectives

The purpose of the change management process is to control the lifecycle of all changes, enabling beneficial changes to be made with minimum disruption to IT services.

The objectives of change management are to:

- Respond to the customer's changing business requirements while maximizing value and reducing incidents, disruption and re-work.
- Respond to the business and IT requests for change that will align the services with the business needs.
- Ensure that changes are recorded and evaluated, and that authorized changes are prioritized, planned, tested, implemented, documented and reviewed in a controlled manner.
- Ensure that all changes to configuration items are recorded in the configuration management system.
- Optimize overall business risk - it is often correct to minimize business risk, but sometimes it is appropriate to knowingly accept a risk because of the potential benefit.

Q.3(d) Explain about the Service asset and configuration management underpinning contracts will be in the SKMS. [5]

Ans.: The objectives of SACM are to:

- Ensure that assets under the control of the IT organization are identified, controlled and properly cared for throughout their lifecycle.
- Identify, control, record, report, audit and verify services and other configuration items (CIs), including versions, baselines, constituent components, their attributes and relationships.
- Account for, manage and protect the integrity of CIs through the service lifecycle by working with change management to ensure that only authorized components are used and only authorized changes are made.
- Ensure the integrity of CIs and configurations required to control the services by establishing and maintaining an accurate and complete configuration management system (CMS).
- Maintain accurate configuration information on the historical, planned and current state of services and other CIs.

The main policy sets out the framework and key principles against which assets and configurations are developed and maintained. Typical principles include:

- Ensuring that service asset and configuration management operations costs and resources are commensurate with the potential risks to the services.
- The need to deliver governance requirements, such as software asset management, Sarbanes-Oxley, ISO/IEC 20000, ISO/IEC 38500 or COBIT.
- The need to deliver the capability, resources and warranties as defined by the service level agreements and contracts.
- The requirement for available, reliable and cost effective services.
- The requirement for clear economic and performance criteria for interventions that reduce costs or optimize service delivery. For example, specifying the age at which PCs should be replaced based on cost of maintenance of older models.

It is important to distinguish between service assets, configuration items and configuration records, as these concepts are often confused:

- A **service asset** is any resource or capability that could contribute to the delivery of a service. Examples of service assets include a virtual server, a physical server, a software licence, a piece of information stored in a service management system, or some knowledge in the head of a senior manager.
- A **configuration item (CI)** is a service asset that needs to be managed in order to deliver an IT service. All CIs are service assets, but many service assets are not configuration items. Examples of configuration items are a server or a software licence. Every CI must be under the control of change management.
- A **configuration record** is a set of attributes and relationships about a CI. Configuration records are stored in a configuration management database (CMDB) and managed with a configuration management system (CMS).

To manage large and complex IT services and infrastructures, service asset and configuration management requires the use of a supporting system known as the configuration management system (CMS).

The CMS holds all the information about CIs within the designated scope. Some of these items will have related specifications or files that contain the contents of the item (e.g. software, document or photograph), and these should be stored in the SKMS. For example, a service CI will include the details such as supplier, cost, purchase date and renewal date for licences and maintenance contracts; related documentation such as SLAs and underpinning contracts will be in the SKMS.

Q.3(e) Explain about Service validation and testing.

[5]

Ans.: The objectives of service validation and testing are to:

- Provide confidence that a release will create a new or changed service that delivers the expected outcomes and value for the customers within the projected costs, capacity and constraints
- Quality assure a release, its constituent service components, the resultant service and service capability delivered by a release
- Validate that a service is 'fit for purpose' - it will deliver the required utility
- Provide assurance that a service is 'fit for use' - it will deliver the agreed warranty
- Confirm that the customer and stakeholder requirements for the new or changed service are correctly defined and remedy any errors or variances early in the service lifecycle as this is considerably cheaper than fixing errors in the live environment
- Plan and implement a structured validation and testing process that provides objective evidence that the new or changed service will support the customer's business and stakeholder requirements, including the agreed service levels
- Identify, assess and address issues, errors and risks throughout service transition. Policies for the service validation and testing process will reflect the requirements from service strategy and service design and should help service validation and testing staff to meet the expectations of the business.

Typical policy statements might include:

- All tests must be designed and carried out by people who have not been involved in other design or development activities for the service.
- Test pass/fail criteria must be documented in a service design package before the start of any testing. Every test environment must be restored to a known state before testing is started.
- Test library and re-use policy. The nature of IT service management is repetitive and benefits greatly from re-use. Service validation and testing should create, catalogue and maintain a library of test models, test cases, test scripts and test data that can be re-used. Projects and service teams need to be motivated and incentivized to create re-usable test assets and re-use test assets.

Q.3(f) Explain about Knowledge management.

[5]

Ans.: The ability to deliver a quality service or process rests to a significant extent on the ability of those involved to respond to circumstances - and that in turn rests heavily on their understanding of the situation, the options and the consequences and benefits, i.e. their knowledge of the situation in which they are currently, or in which they may find themselves. That knowledge within the service transition domain might include:

- Identity of stakeholders
- Acceptable risk levels and performance expectations
- Available resource and timescales.

The quality and relevance of the knowledge rests in turn on the accessibility, quality and continued relevance of the underpinning data and information available to service staff.

The objectives of knowledge management are to:

- Improve the quality of management decisionmaking by ensuring that reliable and secure knowledge, information and data is available throughout the service lifecycle
- Enable the service provider to be more efficient and improve quality of service, increase satisfaction and reduce the cost of service by reducing the need to rediscover knowledge
- Ensure that staff have a clear and common understanding of the value that their services provide to customers and the ways in which benefits are realized from the use of those services
- Maintain a service knowledge management system (SKMS) that provides controlled access to knowledge, information and data that is appropriate for each audience

- Gather, analyse, store, share, use and maintain knowledge, information and data throughout the service provider organization.

Knowledge management provides value to all stages of the service lifecycle by providing secure and controlled access to the knowledge, information and data that is needed to manage and deliver services.

Knowledge management is especially significant within service transition since relevant and appropriate knowledge is one of the key service elements being transitioned. Examples where successful transition rests on appropriate knowledge management include:

- User, service desk, support staff and supplier understanding of the new or changed service, including knowledge of errors signed off before deployment, to facilitate the roles within that service
- Awareness of the use of the service, and the discontinuation of previous versions
- Establishment of the acceptable risk and confidence levels associated with the transition, e.g. measuring, understanding and acting correctly on results of testing and other assurance results. Effective knowledge management is a powerful asset for people in all roles across all stages of the service lifecycle. It is an excellent method for individuals and teams to share data, information and knowledge about all facets of an IT service.

The creation of a single system for knowledge management is recommended.

Q.4 Attempt any THREE question of the following : [15]

Q.4(a) Explain the scope for Service operation [5]

Ans.: Operation includes the execution of all ongoing activities required to deliver and support services.

The scope of Service Operation includes:

- **The services themselves.** Any activity that forms part of a service is included in Service Operation, whether it is performed by the Service Provider, an external supplier or the user or customer of that service
- **Service Management processes.** The ongoing management and execution of many Service Management processes are performed in Service Operation, even though a number of ITIL processes (such as Change and Capacity Management) originate at the Service Design or Service Transition stage of the Service Lifecycle, they are in use continually in Service Operation. Some processes are not included specifically in Service Operation, such as Strategy Definition, the actual design process itself. These processes focus more on longer-term planning and improvement activities, which are outside the direct scope of Service Operation; however, Service Operation provides input and influences these regularly as part of the lifecycle of Service Management.
- **Technology.** All services require some form of technology to deliver them. Managing this technology is not a separate issue, but an integral part of the management of the services themselves. Therefore a large part of this publication is concerned with the management of the infrastructure used to deliver services.
- **People.** Regardless of what services, processes and technology are managed, they are all about people. It is people who drive the demand for the organization's services and products and it is people who decide how this will be done. Ultimately, it is people who manage the technology, processes and services. Failure to recognize this will result (and has resulted) in the failure of Service Management projects.

Q.4(b) What do you mean by Function and Group. [5]

Ans.: The Service Operation publication uses several terms to refer to the way in which people are organized to execute processes or activities. There are several published definitions for each term and it is not the purpose of this publication to enter the debate about which definition is best. Please note that the following definitions are generic and not prescriptive. They are provided simply to define assumptions and to facilitate understanding of the material. The reader should adapt these principles to the organizational practices used in their own organization. • **Function:** A function is a logical concept that refers to the people and automated measures that execute a

defined process, an activity or a combination of processes or activities. In larger organizations, a function may be broken out and performed by several departments, teams and groups, or it may be embodied within a single organizational unit (e.g. Service Desk). In smaller organizations, one person or group can perform multiple functions - e.g. a Technical Management department could also incorporate the Service Desk function.

- **Group:** A group is a number of people who are similar in some way. In this publication, groups refer to people who perform similar activities -even though they may work on different technology or report into different organizational structures or even in different companies. Groups are usually not formal organization structures, but are very useful in defining common processes across the organization - e.g. ensuring that all people who resolve incidents complete the Incident Record in the same way. In this publication the term 'group' does not refer to a group of companies that are owned by the same entity

Q.4(c) What do you mean by terms Team, Department, Division and Role. [5]

Ans.: **Team:** A team is a more formal type of group. These are people who work together to achieve a common objective, but not necessarily in the same organization structure. Team members can be co-located, or work in multiple different locations and operate virtually. Teams are useful for collaboration, or for dealing with a situation of a temporary or transitional nature. Examples of teams include project teams, application development teams (often consisting of people from several different business units) and incident or problem resolution teams.

Department: Departments are formal organization structures which exist to perform a specific set of defined activities on an ongoing basis. Departments have a hierarchical reporting structure with managers who are usually responsible for the execution of the activities and also for day-to-day management of the staff in the department.

Division: A division refers to a number of departments that have been grouped together, often by geography or product line. A division is normally self-contained and is able to plan and execute all activities in a supply chain.

Role: A role refers to a set of connected behaviours or actions that are performed by a person, team or group in a specific context. For example, a Technical Management department can perform the role of Problem Management when diagnosing the root cause of incidents. This same department could also be expected to play several other roles at different times, e.g. it may assess the impact of changes (Change Management role), manage the performance of devices under their control (Capacity Management role), etc. The scope of their role and what triggers them to play that role are defined by the relevant process and agreed by their line manager.

Q.4(d) What do you mean by the terms Communication and Meeting. [5]

Ans.: **Communication :** Good communication is needed with other IT teams and departments, with users and internal customers, and between the Service Operation teams and departments themselves. Issues can often be prevented or mitigated with appropriate communication.

This section is aimed at summarizing the communication that should take place in Service Operation. This is not a separate process, but a checklist of the type of communication that is required for effective Service Operation. An important principle is that all communication must have an intended purpose or a resultant action. Information should not be communicated unless there is a clear audience. In addition, that audience should have been actively involved in determining the need for that communication and what they will do with the information.

A detailed description of the types of communication typical in Service Operation is contained in Appendix B of this publication, together with a description of the typical audience and the actions that are intended to be taken as a result of each communication. These include:

- Routine operational communication
- Communication between shifts

- Performance reporting
- Communication in projects
- Communication related to changes
- Communication related to exceptions
- Communication related to emergencies
- Training on new or customized processes and service designs
- Communication of strategy and design to Service Operation teams.

Meetings : Different organizations communicate in different ways. Where organizations are distributed, they will tend to rely on e-mail and teleconferencing facilities. Organizations that have more mature Service Management processes and tools will tend to rely on the tools and processes for communication (e.g. using an Incident Management tool to escalate and track incidents, instead of requesting e-mail or telephone calls for updates).

Other organizations prefer to communicate using meetings. However, it is important not to get into the mode whereby the only time work is done, or management is involved, is during a meeting. Also, face-to-face meetings tend to increase costs (e.g. travel, time spent in informal discussions, refreshments, etc.), so meeting organizers should balance the value of the meeting with the number and identity of the attendees and the time they will spend in, and getting to, the meeting.

Q.4(e) Explain about the Problem management in detail. [5]

Ans.: Problem: the unknown cause of one or more incidents

- Problem management is the process responsible for managing the lifecycle of all problems
- Purpose
- to manage the lifecycle of all problems from first identification through further investigation, documentation and eventual removal
- Objectives
- to prevent problems and resulting incidents from happening
- to eliminate recurring incidents
- to minimize the impact of incidents that cannot be prevented.

Reactive and proactive problem management activities

- Reactive: process activities will typically be triggered in reaction to an incident that has taken place
- Proactive: process activities are triggered by activities seeking to improve services
- Problem models
- Incidents versus problems.

Process

- | | |
|--|---------------------------|
| 1. Problem detection | 2. Problem logging |
| 3. Problem categorization | 4. Problem prioritization |
| 5. Problem investigation and diagnosis | 6. Workarounds |
| 7. Raising a known error record | 8. Problem resolution |
| 9. Problem closure | 10. Major problem review. |

Q.4(f) Explain about the challenges, critical success factor and risk in service operation. [5]

Ans.: **Challenges**

- Lack of engagement with development and project staff
- Justifying funding
- Challenges for service operation managers
- Service Design may tend to focus on an individual service at a time, whereas Service Operation tends to focus on delivering and supporting all services at the same time.

- Service Design will often be conducted in projects, while Service Operation focuses on ongoing, repeatable management processes and activities
- The two stages in the lifecycle have different metrics, which encourages Service Design to complete the project on time, to specification and in budget. In many cases it is difficult to forecast what the service will look like and how much it will cost after it has been deployed and operated for some time.
- Service Transition that is not used effectively to manage the transition between the Design and Operation phases.

Critical success factors

- Management support
- Business support
- Champions
- Staffing and retention
- Service management training
- Suitable tools
- Validity of testing
- Measurement and reporting

Risks

- Service loss
- Risks to successful service operation
- Inadequate funding and resources
- Loss of momentum
- Loss of key personnel
- Resistance to change
- Lack of management support
- Faulty initial design
- Differing customer expectations

Q.5 Attempt any THREE question of the following :

[15]

Q.5(a) What do you mean by CSI Register.

[5]

Ans.: It is recommended that a CSI register is kept to record all the improvement opportunities and that each one should be categorized into small, medium or large undertakings. Additionally they should be categorized into initiatives that can be achieved quickly, or in the medium term or longer term. Each improvement initiative should also show the benefits that will be achieved by its implementation. With this information a clear prioritized list can be produced. One failing that has been observed is when something has been identified as a lower priority. It never makes its way higher up the list for a further consideration, so automated raising of priorities over time may be a useful addition to the register.

The CSI register contains important information for the overall service provider and should be held and regarded as part of the service knowledge management system (SKMS). The CSI register will introduce a structure and visibility to CSI ensuring that all initiatives are captured and recorded, and benefits realized. Additionally the benefits will be measured to show that they have given the desired results. In forecasting the benefits of each proposed improvement we should also try to quantify the benefit in terms of aspirational key performance indicator (KPI) metrics. This will assist in prioritizing those changes that deliver the most significant incremental benefit to the business.

The CSI register provides a coordinated, consistent view of the potentially numerous improvement activities. It is important to define the interface from the CSI register of initiatives with strategic initiatives and with processes such as problem management, capacity management and change management. In particular the service review meeting is likely to result in a number of

requirements for improvement. The CSI manager should have accountability and responsibility for the production and maintenance of the CSI register. Appendix B shows a simple example of what a CSI register could look like. Each organization should evaluate its own requirements and amend the register to suit their own purposes.

Q.5(b) Explain the term "Why do measure" in CSI.

[5]

Ans.: There are four reasons to monitor and measure:

To validate Monitoring and measuring to validate previous decisions

To direct Monitoring and measuring to set the direction for activities in order to meet set targets; this is the most prevalent reason for monitoring and measuring

To justify Monitoring and measuring to justify, with factual evidence or proof, that a course of action is required

To intervene Monitoring and measuring to identify a point of intervention including subsequent changes and corrective actions. The four basic reasons to monitor and measure lead to three key questions: 'Why are we monitoring and measuring?', 'When do we stop?' and 'Is anyone using the data?' To answer these questions, it is important to identify which of the above reasons is driving the measurement effort. Too often, we continue to measure long after the need has passed. Every time you produce a report you should ask: 'Do we still need this?'.

Q.5(c) Explain about the seven-step improvement Process in CSI.

[5]

Ans.: The improvement process spans not only the management organization but the entire service lifecycle. This is a cornerstone of CSI, the main steps of which are as follows:

- **Identify the strategy for improvement** Identify the overall vision, business need, the strategy and the tactical and operational goals.
- **Define what you will measure** Service strategy and service design should have identified this information early in the lifecycle. CSI can then start its cycle all over again at 'Where are we now?' and 'Where do we want to be?' This identifies the ideal situation for both the business and IT. CSI can conduct a gap analysis to identify the opportunities for improvement as well as answering the question 'How do we get there?'
- **Gather the data** In order to properly answer the question 'Did we get there?', data must first be gathered (usually through service operations). Data can be gathered from many different sources based on goals and objectives identified. At this point the data is raw and no conclusions are drawn.
- **Process the data** Here the data is processed in alignment with the critical success factors (CSFs) and KPIs specified. This means that timeframes are coordinated, unaligned data is rationalized and made consistent, and gaps in the data are identified. The simple goal of this step is to process data from multiple disparate sources to give it context that can be compared. Once we have rationalized the data we can begin analysis.
- **Analyse the information and data** As we bring the data more and more into context, it evolves from raw data into information with which we can start to answer questions about who, what, when, where and how as well as trends and the impact on the business. It is the analysing step that is most often overlooked or forgotten in the rush to present data to management.
- **Present and use the information** Here the answer to 'Did we get there?' is formatted and communicated in whatever way necessary to present to the various stakeholders an accurate picture of the results of the improvement efforts. Knowledge is presented to the business in a form and manner that reflects their needs and assists them in determining the next steps.
- **Implement improvement** The knowledge gained is used to optimize, improve and correct services and processes. Issues have been identified and now solutions are implemented - wisdom is applied to the knowledge. The improvements that need to be taken to improve the service or process are communicated and explained to the organization. Following this step the organization establishes a new baseline and the cycle begins a new.

Q.5(d) Describe about the Objectives of CSI.

[5]

Ans.: Objectives of CSI

- Review, analyze and make recommendations on improvement opportunities in each lifecycle phase: Service Strategy, Service Design, Service Transition and Service Operation.
- Review and analyze Service Level Achievement results.
- Identify and implement individual activities to improve IT service quality and improve the efficiency and effectiveness of enabling ITSM processes.
- Improve cost effectiveness of delivering IT services without sacrificing customer satisfaction.
- Ensure applicable quality management methods are used to support continual improvement activities. Understand and agree on the priorities for improvement based on a deeper development of the principles defined in the vision. The full vision may be years away but this step provides specific goals and a manageable timeframe.
- Detail the CSI plan to achieve higher quality service provision by implementing ITSM processes
- Verify that measurements and metrics are in place to ensure that milestones were achieved, processes compliance is high, and business objectives and priorities were met by the level of service.

Q.5(e) What do you mean by Benchmarking in CSI.

[5]

Ans.: Benchmarking is a process used in management, particularly strategic management, in which organizations evaluate various aspects of their processes in relation to best practice, usually within their own sector

- Procedure
- Informal conversations with customers, employees, or suppliers
- Focus groups
- In-depth marketing research
- Quantitative research
- Surveys
- Questionnaires
- Re-engineering analysis
- Process mapping
- Quality control variance reports
- Financial ratio analysis
- Costs
- Visit
- Time
- Benchmarking database

Value

- Profiling quality in the market
- Boosting self-confidence and pride in employees as well as motivating and tying employees to an organization
- Trust from customers that the organization is a good IT service management provider.
- Benefits
- Achieving economy in the form of lower prices and higher productivity on the part of the service provider
- Achieving efficiency by comparing the costs of providing IT services and the contribution these services make to the business with what is achieved in other organizations. This helps the organization to identify areas for improvement
- Achieving effectiveness in terms of actual business objectives realized compared with what was planned.

Q.5(f) Explain about the Roles and responsibilities that support CSI.

[5]

Ans.: CSI activities and skills required

- Define what you should measure
- Individuals involved with decision making from IT and the business who understand the internal and external factors that influence the necessary elements that should be measured to support the business, governance and, possibly, regulatory legislation.
- Define what you can measure
- Individuals involved with providing the service (internal and external providers) who understand the capabilities of the measuring processes, procedures, tools and staff.
- Gathering the data
- Individuals involved in day-to-day process activities within the Service Transition and Service Operation lifecycle phases.
- Processing the data
- Individuals involved in day-to-day process activities within the Service Transition and Service Operation lifecycle phases.
- Analyzing the data
- Individuals involved with providing the service (internal and external providers) who understand the capabilities of the measuring processes, procedures, tools and staff.
- Presenting and using the information
- Individuals involved with providing the service (internal and external providers) who understand the capabilities of the service and the underpinning processes and possess good communication skills
- Implementing corrective action
- Individuals involved with providing the service (internal and external providers).

Service manager

- manages the development, implementation, evaluation and on-going management of new and existing products and services
- CSI manager
- responsible for the success of all improvement activities.
- Service owner
- accountable for a specific service within an organization
- Process owner
- accountable for the overall quality of the process and oversees the management of, and organizational compliance to, the process flows, procedures, data models, policies and technologies associated with the IT business process
- Service knowledge management
- design, deliver and maintain the Knowledge Management strategy, process and procedures
- Reporting analyst
- reviews and analyses data from components, systems and sub-systems in order to obtain a true end-to-end service achievement.

