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IT SERVICE MANAGEMENT, SERVICE STRATEGY PRINCIPLES

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1.1 IT SERVICE MANAGEMENT

1.1. 1 Introduction:

The collection of tasks known as "IT Service Management" (ITSM) can be used to manage the services provided to end users. A set of best practices and strategies for selecting, planning, delivering, and maintaining IT services within a company are provided by ITIL service management, which is based on the ITIL framework of best practices. These strategies help the IT department's activities and costs to be in line with changing business demands.

1.1.2 What is service management?

Service management is a collection of unique executive skills for providing clients with a benefit in the form of a service. With specialties in strategy, design, transition, operation, and continuous improvement, the capabilities appear as functions and processes for managing services over a lifecycle.

The tasks an organization performs to plan, develop, deliver, operate, and regulate the information technology (IT) services given to consumers are referred to as information technology service management (ITSM).

IT service management is characterised from more technologically oriented approaches to IT management, such as network management and IT systems management, by adopting a process approach to management, concentrating on customer needs and IT services for customers rather than IT systems, and emphasizing continuous improvement.

Four perspectives (4Ps) or attributes can be used to illustrate the ITSM concept:

1. People
2. Products
3. Partners
4. Processes

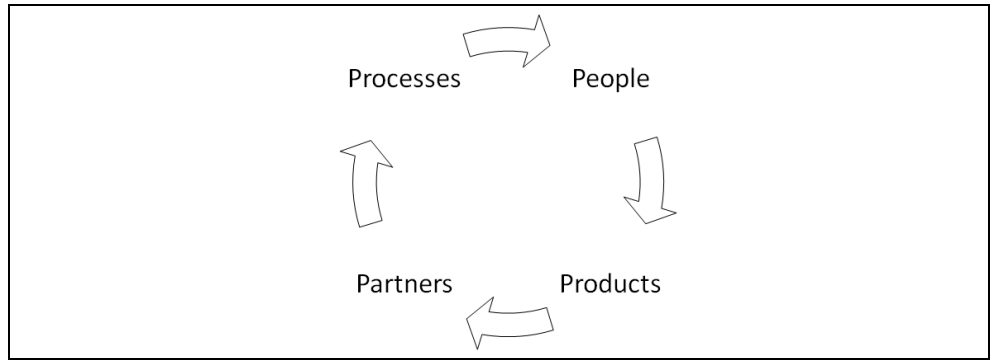

Figure 1.1: Four perspectives for ITSM Concepts

1. **People Perspective:** Role and responsibility definitions for all parties involved, including employees, clients, and other stakeholders. Concerned about the "soft" side, including employees, clients, and other stakeholders
2. **Process Perspective:** An explanation of the procedures needed to provide and support various client services. Relates the process flows-based end-to-end service delivery.
3. **Product/Technology perspective:** The main goal is to offer and support the goods or technologies that the business needs in order to achieve important organisational objectives or goals. Analyzes tools, technology, software, finances, and business services.
4. **Partners/Suppliers Perspective:** The administration of outside vendors (Partners) participating in the delivery and support of the IT-delivered and -supported technology and goods. Reflects the value of connections with partners and outside suppliers and how they affect the delivery of services.

Benefits of ITSM :

1. IT aligned with the business: Achieved by increasing service delivery to business as well as communication between IT and business.
2. To adopt consistent delivery: It ensures that procedures can be followed consistently across the organisation.
3. Better quality and efficiency: It's measuring and control capabilities enable the identification of areas for cost and quality improvement.
4. Reduced cost of failure: IT events and downtime cost money, both in terms of lost productivity for system users and possible loss of revenue if services are unavailable and clients may decide to do business somewhere else.
5. Reduced risk to the business: With IT at the forefront of most businesses nowadays, any potential risk areas should be reduced to a minimum.
6. Better management and accountability: Greater visibility leads to better control and a more accountable service.
7. Better communication: ITSM calls for collaboration and communication beyond conventional management boundaries and divisions.

1.1.3 What are services?

Service is defined as a way of delivering value to customers by helping customers achieve results without owning specific costs and risks. Customers want results but do not want to be responsible or to be responsible for all associated costs and risks.

1.1.4 Business Process:

Business procedures that are constrained by objectives, rules, and laws provide the desired results. The procedures support resources, information, applications, and infrastructure. To guarantee appropriate performance and the desired results, workflow combines the performance of activities and controls flows between resources and measurements. From the perspective of service management, business procedures are especially essential. They use the organization's collective knowledge and experience to accomplish the particular goal described here.

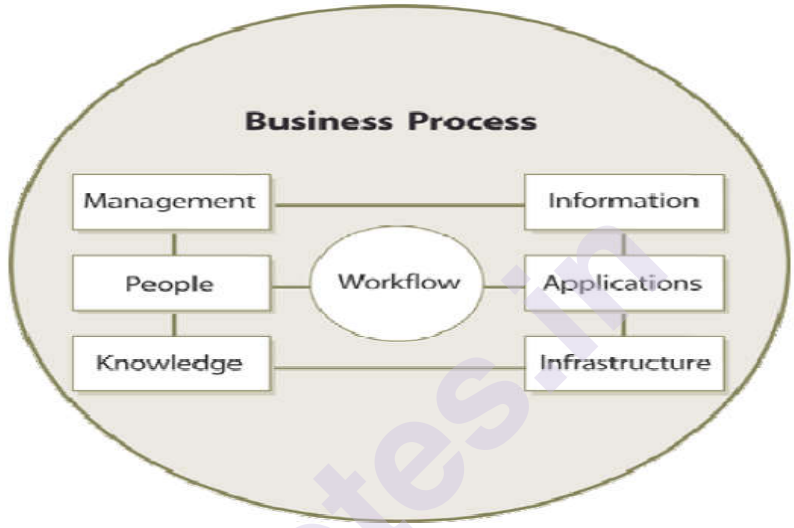

Figure 1.2: Business Process Workflow

1.1.5 Principles of Service management:

1.1.5.1 Specialisation and Coordination:

In service management, the goal is to make customer capabilities and resources available in highly usable form of services at acceptable levels of quality, cost, and risk. Customer control and ownership of specific resources are reduced by service providers. As a result, customers are free to focus on their core competencies.

The customers are experts in business administration and use a set of resources (Pool A) to produce one set of results. Similarly, the pool B service providers specialize in service management. The service management division coordinates insurance and use between the two parties. A customer is satisfied with the use of certain resources (Pool B) unless ownership is required.

With specialization, capabilities and resources are grouped together to achieve focus, expertise, and excellence. Due to accountability, authority, and management attention, coordination of capabilities and resources is easier. Combined capabilities and resources that depend on each other and interact reduce the need for coordination. Where coordination is easy through well-defined interfaces, protocols and agreements, they are controlled by the group that is most able to manage them.

1.1.5.2. The agency principle:

Leaders employ agents to pursue specific goals on their behalf. Agents act on behalf of the leader and can be staff, consultants, or service providers. Customers are the leaders who have agents working for them, which can be service providers or users of those services. The agency model is used in client/server models and software design. Software agents interact with users for their backend functions, processes and systems.

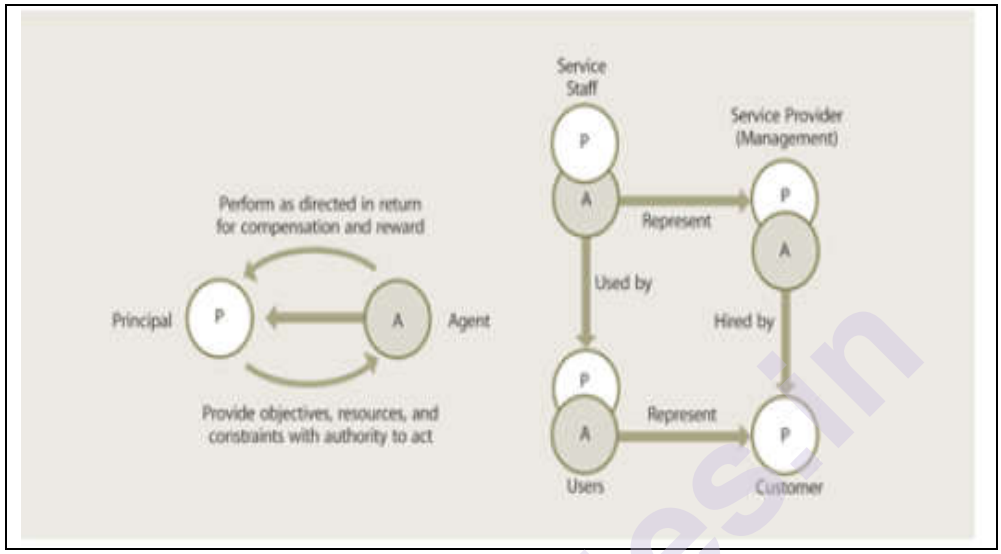

Figure 1.3: The agency model in service management

1.1.5.3. Encapsulation:

Customers are worried about getting access to the asset utility at a reasonable price. They don't deal with intricate technical intricacies, complicated structures, or low-level activities. Instead of complicated resource setups like those for applications, data, infrastructure, and equipment, they prefer simple and secure interfaces. Encapsulation hides what the consumer isn't interested in and clarifies what they will find useful and beneficial in the service. Customers just care about the use. Three distinct but related ideas govern encapsulation: problem separation, modularity, and loose connection.

A. **Separation of concerns:** Complex challenges or problems can be handled or broken down into smaller ones. Each issue is handled by specialised resources and capabilities, which improves outcomes overall. This improves focus and makes it possible to enhance systems and processes on a reasonable scale. With the right information, abilities, and experience, challenges and opportunities are suitable.

B. **Modularity:** System complexity can be managed by the structural principle of modularity. Functionally related elements are grouped to create self-sufficient and workable modules. Interfaces to other systems or modules provide access to the functionality. By lowering duplication, complexity, administrative expenditures, and change expenses, modularity promotes efficiency and economy. Similar

effects are produced via module reuse. At various granularities, encapsulation is feasible for everything from software and hardware parts to organisational structure and business processes.

C. **Loose connection:** The loose coupling of resources with users is made possible by the separation of concerns and modularity. Loss coupling makes it simpler to modify the resource internally without affecting usage. Additionally, it prevents imposing modifications that can come at an unforeseen expense to the consumer. Additionally, lose coupling enables dynamic resource allocation across many uses.

1.1.5.4. Principles of systems:

A system is composed of interrelated parts that cooperate to achieve a common goal.

i) Open-loop And Closed-loop Control Processes:

The action of the control system is unaffected by the output in an open loop control system; this type of system is also known as a time-dependent system. It receives no feedback. It is incredibly easy to use, requires little maintenance, runs quickly, and is economical. This system has poor accuracy and is less trustworthy.

The output of the system that depends on the system's input is known as a closed-loop control system. One or more feedback loops exist between the input & output of this control system. This system analyses its input and produces the desired output. This type of system generates the error signal, which is the primary discrepancy between the system's output and input.

ii) Feedback and Learning:

Growing and learning are essential parts of how great organisations operate. Feedback, which is an input in a cycle based on performance or results in the preceding cycle, is what causes learning. Positive or self-sustaining feedback can lead to exponential development or decline, depending on the situation. Balance or balance could be the result of something negative or self-correcting. A common control pattern that can be established by self-correcting feedback is goal-seeking behaviour.

For each sort of feedback loop, there are multiple examples in organisations, processes, and functions. When a process operates as a dynamic system, the interaction of the feedback loops governs the behaviour of the process.

1.1.5.5. The service Life Cycle:

The official definition of a Service is “a means of delivering value to Customers by facilitating outcomes customers want to achieve without the ownership of specific costs or risks”.

Lifecycle: a creature or inanimate object's development through a series of natural phases. For instance, there are phases for humans at birth, baby,

toddler, child, pre-teen, adolescent, young adult, adult, old adult, and death.

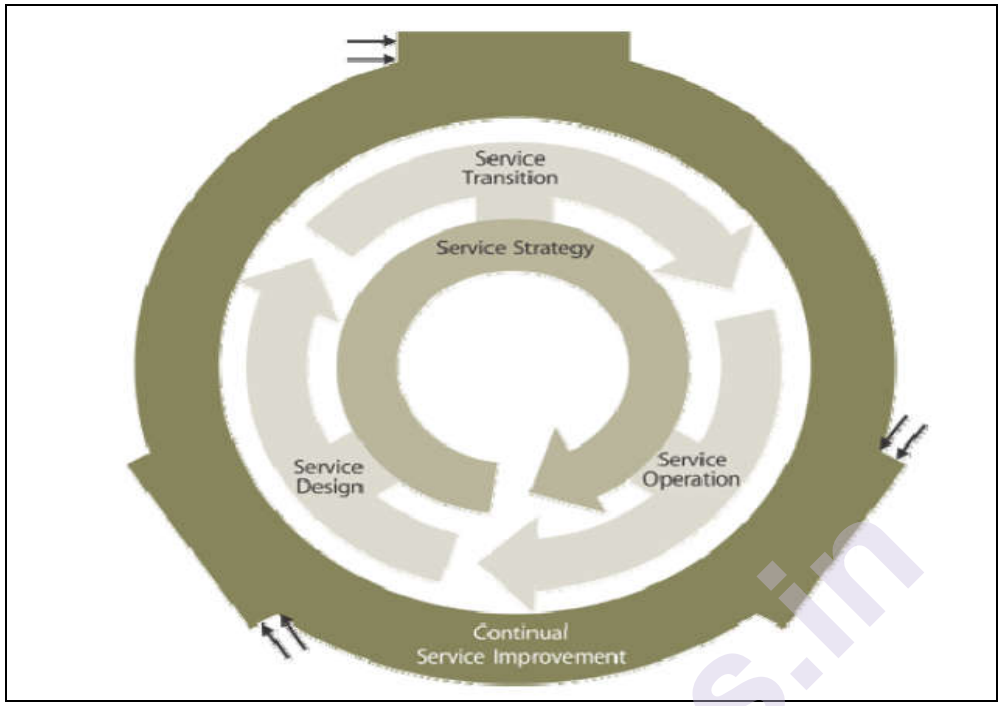

Figure 1.4: The Service Lifecycle

ITIL® Framework provided best practices for ITSM based around the how questions. These included:

- How should we design for availability, capacity and continuity of services?
- How can we respond to and manage incidents, problems and known errors?
- As Version 3 now maintains a holistic view covering the entire lifecycle of a service, no longer does
- ITIL® just answer the how questions, but also why?
- Why does a customer need this service?
- Why should the customer purchase services from us?
- Why should we provide (x) levels of availability, capacity and continuity?

By first asking these questions it enables a service provider to provide overall strategic objectives for the IT organization, which will then be used to direct how services are designed, transitioned, supported and improved in order to deliver optimum value to customers and stakeholders.

1.1.5.6 Functions and processes across the life cycle:

i) Processes -

A systematic collection of related actions that work together to produce outcomes and add value for customers or stakeholders is referred to as a process. Through the actions taken, a process changes one or more inputs into certain outputs. There are some principles:

- Each and every procedure need to be quantifiable and performance-based (not just time but overall cost, effort and other resources).
- Processes are strategic assets for distinguishing the market and gaining competitive advantages.
- The definition of roles, responsibilities, tools, management controls, rules, standards, guidelines, activities, and job instructions may all be done through processes, if necessary.

A process owner is accountable for the outcomes and for making sure the process serves the intended purpose. The operational management of a process is the responsibility of a process manager. One process may have numerous managers, or (usually in smaller organisations) the process owner and manager may be the same individual.

When defining and creating processes, it's critical to consider both the physical and behavioural elements. This can be accomplished by making sure that all necessary stakeholders (such as staff, clients, and users, etc.) are sufficiently involved in process design so that:

- They can express their own thoughts, worries, and opinions that may affect the design, implementation, and improvement of processes. Present-day, previously unidentified behaviours that might influence the process' design and execution may be of special significance.
- Stakeholder groups are given adequate training and instruction on how to carry out their roles in the process and the worth of the process.
- Stakeholders are often more likely to respond favourably than to actively or quietly oppose organisational changes because they feel empowered by the change that is being generated.

ii) Functions -

Functions are groupings of roles and automated actions that perform a process, activity or combination. Service operations must manage the IT operating environment in "steady state." There are different roles and responsibilities for service design, delivery, and management.

iii) Connecting Processes and Functions -

People often claim that processes are perfect. Until you involve people. A lack of clarity about roles and responsibilities can lead to processes being

dropped due to misunderstandings and a lack of clarity.The RACI model is useful for defining roles and responsibilities for process design.

- R – Responsibility. The person who performs the work.
- A – Accountability. The person responsible for making the work or decision.
- C – Consult. Those who must be consulted prior to a decision being made and/or the task being completed.
- I – Inform. Anyone who requires to be notified when a decision is made or work is finished.

	Service Desk	Desktop	Applications	Operations Manager
Logging	RACI	-	-	CI
Classification	RACI	RCI	-	CI
Investigation	RACI	RCI	RCI	CI

Table 1.1: RACI model

A RACI Model is used to define the roles and responsibilities of various Functions in relation to the activities of Incident Management.

General Rules that exist:

- Only 1 “A” per Row can be defined (ensures accountability, more than one “A” would confuse this).
- At least 1 “R” per Row must be (shows that actions are taking place), with more than one being appropriate where there is shared responsibility.

1.2 SERVICE STRATEGY PRINCIPLES

The first phase in the ITIL lifecycle is to determine the service's value. The following principles should be kept in mind by anyone wishing to define a service.

1.2.1 Value creation:

Any business entity's primary objective is the creation of value. Creating value for customers ensures that future investment capital is available by increasing stock prices, whereas selling products and services relies on creating value for customers. The excess of revenue over expenditure (or capital cost) is said to create value from a financial perspective. Analysts have a broad definition of "value creation" that goes beyond traditional financial measures. Today's companies rely on intangible drivers such as innovation, people, ideas, and brands.

From the customer's point of view the value of a service consists of two basic elements:

1. **Utility** is the functionality of a service that meets a specific requirement or eliminates business constraints. It increases company performance.

2. **Warranty**, the commitment or guarantee that a product or service complies with agreed requirements for availability, capacity, continuity, and safety, reduces service delivery fluctuations.

1.2.2 Service Assets:

Resources and skills are service providers' strategic assets. Resources are direct delivery inputs, while management, organization, and people are necessary to convert them. Skills are expertise and knowledge-intensive, linked to people, systems, processes and technologies, and need to be improved over time. Capabilities, resources, and skills are essential for generating value. The productive capacity of a service provider depends on their available resources.

1.2.3 Service Provider:

Service providers are IT companies that provide products and solutions through on-demand services, pay per use, or a hybrid model of delivery.

There are three types of service providers:

1. Internal Service Provider
2. Shared Services Unit
3. External Service Provider

1. Internal Service Provider (TYPE I):

Organizations frequently have business units or verticals, to use a common term. Almost every business unit functions as a separate organisation (an organisation within an organization).

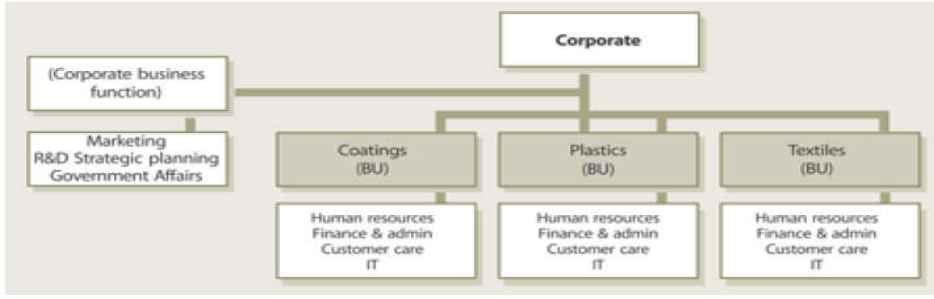

Figure 1.5: Type I providers

If you integrate IT teams (IT service providers) into each of these business divisions, you will have an equal number of IT teams. Internal service

providers are the groups that work with the business unit's clients to deliver IT services.

This model costs a fair amount of money and is not optimal. Under each business unit, a number of roles and tasks will need to be duplicated

2. Shared Services Unit (TYPE II):

Let's imagine that you create a centralised IT team by gathering all the IT teams from the previous model into one large group. Additionally, all business divisions alike will receive IT support from this single IT staff.

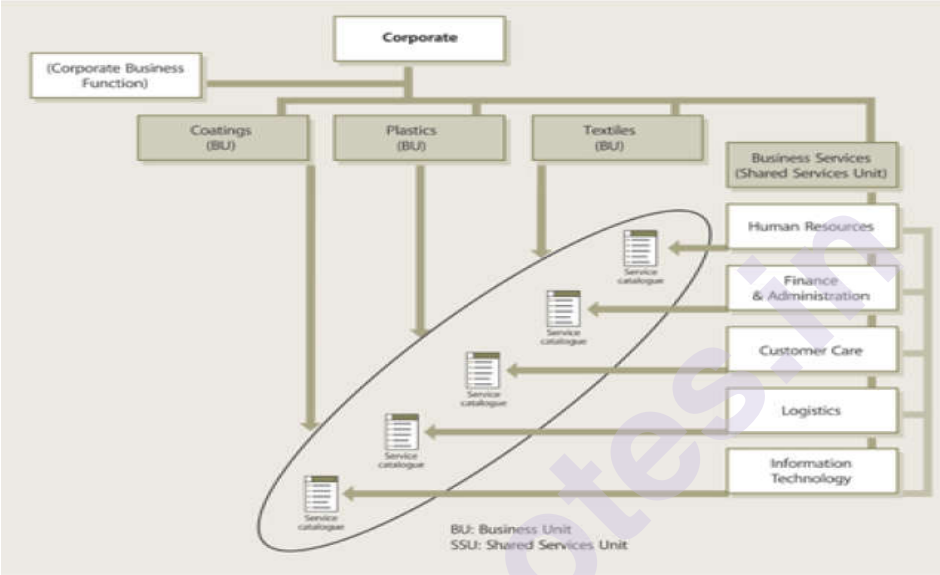

Figure 1.6: Common Type II providers

The most popular and optimal model is this one. The sole disadvantage is that, in contrast to the internal service provider model, business units might not receive preferential treatment.

3. External Service Provider (TYPE III):

The benefit of using an external service provider is that the business does not have to worry about capital expenditures like the acquisition and upkeep of the equipment utilised by the service providers. There is a set amount that must be paid to the service provider, and since it is the service provider's responsibility to handle that, the company need not worry about paying individual salaries or over time.

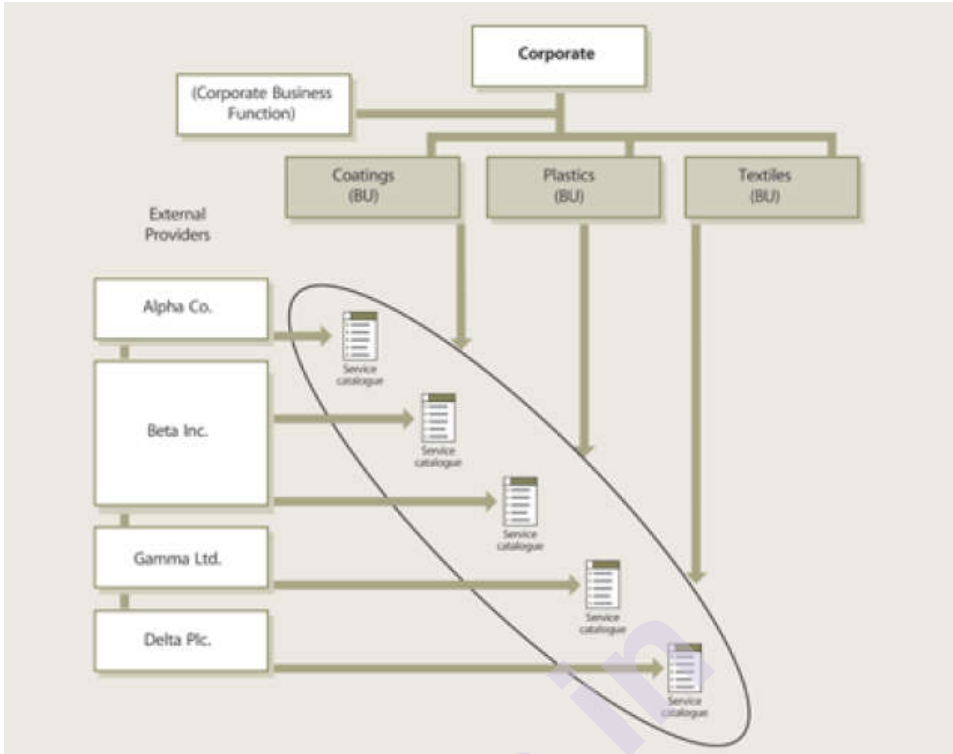

Figure 1.7: Type III providers

Utilizing outside service providers gives businesses additional flexibility. It is not feasible financially for a small business unit to purchase pricey IT equipment that would only be used for a few tasks. However, outsourcing IT services is more cost-effective because it enables businesses to take advantage of the best equipment's advantages without having to pay for its ownership.

1.2.4 Service Structures:

The best organisational practises outlined in ITIL must be customised to fit particular organisations and circumstances because there is no one optimal way to do things. Resource limitations, as well as the size, character, and needs of the company and its clients, must be taken into consideration before making any modifications. Strategy serves as the foundation for organisational design, providing direction and establishing the standards for each stage of the design process. The roles and responsibilities necessary to carry out the processes and activities must be clearly defined by the organisation for the plan to be successful.

Age, size, geographic reach, and technological adoption all have an impact on an organization's structure. Roles and relationships must alter as the company develops and evolves; otherwise, issues may occur. This is crucial for businesses adopting a service orientation since efficiency and discipline-related pressures always result in increased formalisation and complexity. Multiple jobs may be merged under one individual in a small organisation. Each of these tasks may be filled by a number of individuals in larger organisations, divided according to geography, technology, or other factors.

The differences between small and large IT organization can be seen in the table below:

Small IT Organization	Large IT Organization
Roles are combined	Roles are separate
Segregation of duties limited	Segregation of duties maximized
Generalization of skills	Specialization of skills
Less complexity	More complexity

1.2.5 4p's of strategy:

The four "Ps" of perspective, position, plan, and pattern—each of which represents a distinct way to approach your service strategy—are extensively covered by ITIL. These terms should not be confused with the four "Ps" of ITIL Service Design.

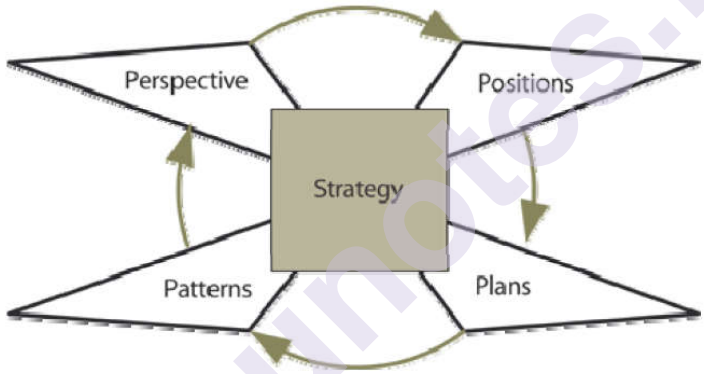

Figure 1.8: Perspectives, positions, plans and patterns

1. **Perspective: -** It describes the vision and the direction of the organization. It understands how thge business of the organization is, how it interacts with the customer, and how its services will be provided.

2. **Position: -** The position refers to the attributes and capabilities that the service provider has that sets them apart from their competitors (other service providers). Positions could be based on value or low cost, specialized services or providing an inclusive range of services, knowledge of a customers environment or industry variables.

3. **Plan: -** It gives a blueprint of how service providers will transition from their current situation to desired situation. Plan describes all the needed steps the service provider will have to take to achieve their perspective.

4. **Pattern: -** It describes the repeatable actions that service provider will have to perform inorder to meet its strategic objectives.

1.3 SUMMARY

In this chapter we have covered concept of IT Service Management, What is service management? What are services? Business Process, Principles of Service management and types of it. The service Life Cycle with functions and processes across the life cycle.Service Strategy Principles.

1.4 QUESTIONS

1. Explain ITSM. Describe the four ITSM perspectives.
2. Describe ITSM. Justify the advantages of ITSM.
3. By ITSM, what do you mean? What are the problems with ITSM?
4. A brief note on ITIL, services, and business processes is required.
5. Describe the foundations of service management.
6. Describe the service management notion of encapsulation briefly.
7. Elaborate ITSM service life cycle.
8. What are Processes across the ITSM life cycle?
9. What are Functions across the ITSM life cycle?
10. How are the functions and processes in the ITSM life cycle related?
11. Write short note on Value Creation.
12. Write short note on Service Assets.
13. Who is Service Provider? What are its types?
14. Write short note on Service Structure.
15. Explain four P's of Service Strategy.

1.5 REFERENCE FOR FURTHER READING

1. ITIL Foundation: ITIL 4 Edition (Itil 4 Foundation) by Axelos
2. ITIL v3 Foundation Complete Certification Kit.
3. ITIL v3 Service Strategy OGC/TSO

Web references:-

1. https://www.tutorialspoint.com/itil/service_strategy_overview.htm
2. https://www.simplilearn.com/tutorials/itil-tutorial/what-is-it-service-management

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2

SERVICE STRATEGY, CHALLENGES, CRITICAL SUCCESS FACTORS AND RISK

Unit Structure:

2.1 Service Strategy

2.1.1 Define the market

2.1.2 Develop the offerings

2.1.3 Develop Strategic Assets

2.1.4 Prepare for execution

2.2 Challenges

2.3 Critical Success factors and risks

2.3.1 Complexity

2.3.2 Coordination and Control

2.3.3 Preserving value

2.3.4 Effectiveness in measurement

2.3.5 Risks

2.4 Summary

2.5 Questions

2.6 References

2.1 SERVICE STRATEGY

2.1.1 Define the market:

Organizations in the context of service management are interested in strategy from two distinct but linked perspectives. There are service strategies and service strategies. Service strategies are designed from one point of view. Customers can distinguish providers' services from competitive alternatives.

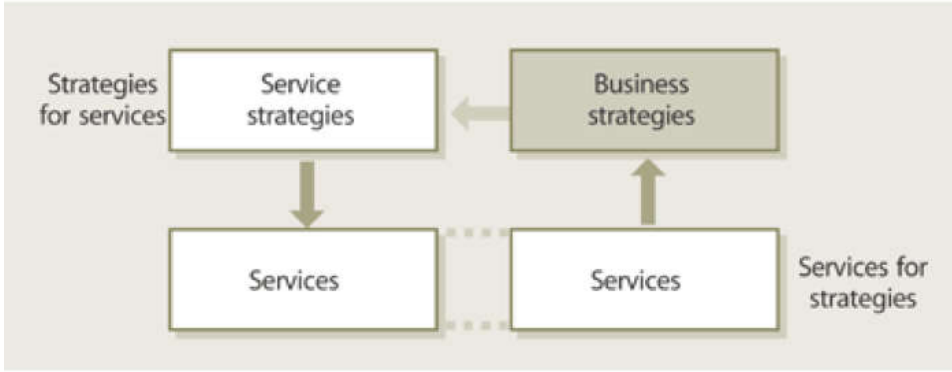

Figure 2.1: Strategies for services and services for strategies

Instead of actual items and transactions, the marketing approach for services emphasises giving client's processes, experiences, and intangibles. It entails integrating the customer's focus across the entire organisation and across all functions. To create a successful marketing plan for services, the company's marketing, sales, human resources, operations, and R&D departments must collaborate. The strategy of marketing services places more emphasis on customers, usage, and connections than traditional products marketing does. Under a variety of restrictions and with the help of their available resources, organisations work to fulfil their business objectives. Limitations come in the form of expenses and risks brought on by complexity, ambiguity, and commercial disputes. The ability of the corporation to generate value depends on how well its corporate assets perform. Assets must function well overall. The corporation might own the assets or someone else might use them in a variety of financial arrangements.

Most frequently, these arrangements consist of contracts or agreements for services. Business managers have the obligation, power, and resources to carry out specific tasks in the most effective way. Managers can enhance the performance of company assets to provide better results by providing services. The influence of a service on the performance of corporate assets is the greatest way to gauge its value in terms of bettering results.

2.1.2 Develop the offerings:

A collection of business outcomes that a service can facilitate defines a market segment. The potential to simplify these outcomes identifies a market sector. The following are examples of business outcomes that could serve as the foundation for one or more market spaces:

- With the wireless computer sales management system, sales teams are productive.
- The warehouse management system is connected to the e-commerce website.
- Major commercial applications are secure and under surveillance.
- Information on loan applicants is more quickly available to loan officers.

- Customers have more payment options with online bill payment services.
- There is no risk to business continuity.

Each of the terms and conditions is linked to the services that make use of one or more categories of client assets, such as personnel, facilities, data, receivables, and purchase orders. There are various ways to satisfy each requirement. Customers favour the option with lesser costs and risks. In order to accomplish certain business goals, service providers establish these conditions by offering services and assistance to clients. As a result, a market space provides service providers with a variety of chances to add value to a customer's business through one or more services.

Even when the SLA's terms and conditions are adhered to, customers frequently express their discontent with a service provider. Services are frequently described in terms of resources that clients can use. The context in which these resources are helpful and the business outcomes that, in the client's eyes, justify the expense of a service are not sufficiently specified in the definitions of service. Poor design, ineffective operation, and subpar service contract performance are the results of this issue. If it is evident where improvements are actually required, then improving services can be challenging. Customers may comprehend and value improvements only in the context of their own business assets, performance, and outcomes.

2.1.3 Develop Strategic Assets:

The service provided will only get better over time as both parties gain a better understanding of their respective service demands. Some stakeholders may enter into a service agreement with a service provider that has low value contracts.

At this point, it would only make sense for the service provider to invest in and expand their treasured services and goods by hiring more specialist workers and using apps that can increase their services. This development would only persuade a client to renew their partnership.

2.1.4 Prepare for execution:

Each service model exemplifies a process. This model offers a simple and useful method for creating service strategy. It does not, however, ensure success. Making a strategy relevant for the circumstances or context of an organisation requires reflection and analysis. Thinking and acting are both components of strategy.

Before developing a service plan, a supplier should thoroughly assess what it already performs. Probably a core of distinction already exists. A seasoned service provider frequently overlooks its own distinctive selling points. The answers to the following queries can assist in defining a service provider's unique capabilities:

Which of our services or service varieties are the most distinctive?

Which of our services or service varieties are the most profitable?

Which of our customers and stakeholders are the most satisfied?

Which customers, channels or purchase occasions are the most profitable?

Factor	Description
Strength and Weaknesses	The attributes of the organization. e.g.: resources
Distinctive competencies	capabilities, service quality, operating leverage, experience, skills, cost structures, customer service, global reach, product knowledge, customer relationships and so on.
Business strategy	The perspective, position, plans and patterns received from a business strategy. For example, a Type I and II provider may be directed, as part of a new business model, to expose services to external partners or over the internet.
Critical success factors	How will the service provider know when it is successful?
Threats and opportunities	When must those factors be achieved? Includes competitive thinking. For example, 'Is the service provider vulnerable to substitution?'

Table 2.1 Internal and external factors for a strategic assessment

2.2 CHALLENGES

While strategies are the measures to be taken to accomplish the goals, challenges are the anticipated outcomes of pursuing them. To prevent future disagreements, establish clear goals and use consistent decision-making. They distinguish and act as benchmarks. Companies should steer clear of the following "goal management" techniques.

- Crisis management: the idea that a company's capacity to resolve issues is what defines it. Allowing external circumstances to guide decisions is the strategy.
- Extrapolation management refers to continuing the same activity in the same manner while things are going well.
- Managing with the hope that everything will turn out in the end.
- Subjective management: putting in your best effort to carry out the necessary tasks. There is no overall strategy.

Four typical information categories are frequently gathered and presented as goals. Senior managers need to be aware of each category's risk, even if it can't be entirely avoided:

1. **Solutions -** Customers communicate their needs in the form of a problem solution. Customers might not have the necessary technical knowledge to develop the most effective solution. In the end, clients can be dissatisfied with the answer they offer. To reduce this danger, look for the standards used to assess the worth of a service rather than the opinions of customers about the service itself.

2. **Specifications -** Customers submit their specification needs, including vendor, product, architectural style, computer platform, etc. By adopting specifications, a provider unnecessarily restricts its own business from offering the best services.

3. Customer wants are presented as high-level descriptions of the general level of service quality. High-level explanations are inherently lacking in particular client benefits.

4. **Benefits -** Customers present their needs in the form of benefit statements. Again, the assertions' vagueness or accuracy pose a risk. Better security, a quicker response, and high reliability all have various connotations for the organisation.

2.3 CRITICAL SUCCESS FACTORS

Every market sector has key success criteria that affect whether a service approach is successful or unsuccessful. In business literature, critical success elements are also known as strategic industry factors (SIF) and generally include the following:

- They serve as important factors of the success of industry leaders and are characterised in terms of competencies and resources.
- They are not unique to any one corporation; rather, they are defined by levels of market area.
- They serve as the foundation for rivals' competition.
- They need significant commitment and time to produce, are dynamic rather than static, and their value is extracted in conjunction with other elements.

Critical success factors by themselves are altered or influenced by one or more of the following factors:

- Customers
- Competitors
- Suppliers
- Regulators.

2.3.1 Complexity:

IT companies are intricate systems. A complex system is defined by organised complexity, as opposed to disorganised complexity (random systems) or organised simplicity (simple systems).

Different from simple systems, complex systems pose peculiar difficulties. They are closely related. They are adaptable and self-organizing. They are hence politically resistant and self-stabilizing. Our comprehension of things is limited by their intricacy. As a result, individuals become more resistant to change the more you try to implement it.

2.3.2 Coordination and Control:

Decision-makers typically have constrained amounts of time, focus, and personal capacity. Teams and individuals with expertise in particular systems, processes, performance, and results are given roles and responsibilities. Deep knowledge, competence, and experience can be developed through specialisation. Additionally, it makes it possible for innovation, enhancements, and modifications to occur in a regulated setting. The requirement for coordination rises in direct proportion to the degree of expertise. Due to the degree of specialisation needed for various phases, processes, and tasks of the service life cycle, this poses a significant problem for service management. It is possible to strengthen teamwork and individual control.

The objectives of one or more service management processes or life cycles serve as the foundation for control perspectives.

They aid managers in concentrating on what is crucial and pertinent to the operations they are in charge of, and they make sure they have accurate, useful, and effective control information. Determining the information needs for effective learning and organisational improvement can also benefit from control approaches. Such a view of control is provided by financial management. Customers display the amounts they are willing to pay for a specific degree of service quality.

2.3.3 Preserving value:

Customers are aware of all relevant expenses that are incurred indirectly as a result of getting the committed utility and guarantee, in addition to the direct costs of actual usage. A very clear goal for service providers is to provide value for their clients. Creating value for one's own stakeholders is equally crucial. For internal providers, these two sets of objectives can be tightly correlated. With foreign vendors in particular, they might easily diverge or clash. Due to the hidden fees that customers pay when using a service, consumer value is quickly lost. If the effect of the hidden costs is set, poor service management during the lifespan may result in customers paying far more than the service's pricing.

2.3.4 Effectiveness in measurement:

Performance metrics in service companies are frequently out of sync with the business environment they support. Traditional metrics place a greater emphasis on internal goals than on external factors that affect customer satisfaction. Even measurements taken by established businesses have an emphasis on control at the price of client responsiveness. Even though every company is different, there are some universal principles that can be used to create measurements that are effective. Measures concentrate on strategic goals, monitor development, and offer commentary. Make sure to adjust measurements when the plan changes. Because measures rather than strategic aims dictate incentives and promotions, older measurements will achieve new objectives when they conflict. Adding new strategic goals without altering the corresponding metrics remains unchanged. A strategy that incorporates and supports cross-domain coordination with service management has a higher chance of success.

2.3.5 Risks:

Because risk is frequently associated with dangers, people typically view it as something to avoid. Changes to the Service Portfolio are frequently necessary for the implementation of strategies, which calls for risk management. Risk is characterised as the unpredictability of an event, whether a favourable opportunity or a harmful threat. The fulfilment of an organization's business goals may be impacted by hazards, which must be identified and controlled in order to manage risks. Every company controls its risk. The goal of risk management is to make sure the organisation uses a risk framework with a set of clear processes in a cost-effective manner. Through a thorough awareness of risks and their anticipated consequences, it is hoped to enable improved decision making. There are two distinct phases: risk analysis and risk management.

- The goal of risk analysis is to acquire data on risk exposure so that the company can manage risk appropriately and make informed decisions.
- Risk management entails having procedures in place to keep track of risks, having access to accurate and current risk information, having the appropriate level of control in place to deal with those risks, and having decision-making processes backed by a framework of risk analysis and evaluation.

2.4 SUMMARY

In this chapter we have covered Service Strategy, How Develop Strategic Assets?, Prepare for execution.Challenges, critical success factors and risks in terms of complexity, coordination and control, preserving value, effectiveness in measurement, actual risks.

2.5 QUESTIONS

1. How are markets defined in service strategy?
2. How should service strategy offerings be developed?
3. How should a service strategy create its strategic assets?
4. How should the Service Strategy be prepared for use?
5. What are the Service Strategy's difficulties?
6. What are the key success variables for the service strategy?
7. What level of complexity does Service Strategy involve?
8. In service strategy, what do coordination and control mean?
9. How can service strategy value be maintained?
10. Compose a brief essay on the effectiveness of service strategy measurement.
11. What dangers are connected to service strategy?

2.6 REFERENCE FOR FURTHER READING

1. ITIL Foundation: ITIL 4 Edition (Itil 4 Foundation) by Axelos
2. ITIL v3 Foundation Complete Certification Kit.
3. ITIL v3 Service Strategy OGC/TSO

Web references:

1. https://www.tutorialspoint.com/itil
2. https://www.simplilearn.com/tutorials

3

SERVICE DESIGN, SERVICE DESIGN PRINCIPLES

Unit Structure:

3.1 Fundamentals

3.2 Service Design Principles:

- 3.2.1 Goals
- 3.2.2 Balanced Design
- 3.2.3 Identifying Service requirements
- 3.2.4 Identifying and documenting business requirements and drivers
- 3.2.5 Design activities
- 3.2.6 Design aspects
- 3.2.7 Subsequent design activities
- 3.2.8 Design constraints
- 3.2.9 Service oriented architecture
- 3.2.10 Business Service Management
- 3.2.11 Service Design Models

3.3 Summary

3.4 Questions

3.5 References

3.1 FUNDAMENTALS

The goal of service design is to take a service and adapt it to the demands of the client and user. It can be applied to revamp current services or start over to develop a new service. Creating the design standards for the services that will be offered can be considered as the process of gathering service demands, translating them into integrated service requirements. In order to implement the strategy and facilitate the introduction of these services in the live environment, the main goal of service design is to design IT services in conjunction with IT practises, processes, and policies. This ensures quality service delivery, customer satisfaction, and cost-effective service delivery. The IT services should be efficiently

designed as part of service design so that they do not require significant upgrade during their life cycle.

3.1.1 Objective and aspects of Design:

To develop appropriate and creative IT services, including their architectures, procedures, policies, and documentation, to fulfil present and future business requirements, is the major objective of the service design stage. The service design process has five distinct components.

1. Updated or new services
2. System and tools for service administration, including the service portfolio and service catalogue
3. Technology in architecture and management.
4. Required procedures.
5. Metrics and measurement techniques.

3.1.2 Service Design purpose:

Organizations involved in creating, delivering, or supporting services, including internal and external service providers, should consider ITIL Service Design. Organisations with a goal of enhancing services through the efficient use of service management principles and a service life-cycle approach. Every professional working in service management should read the publication.

- IT architects
- IT managers
- IT practitioners
- IT service owners

3.1.3 Usage:

Offering an IT service can be done in-house, externally, or through a partnership. This article is essentially applicable to all forms of service delivery. Therefore, this book is relevant to anyone involved in the delivery of IT services, whether it be within their own company, through outsourcing, or through joint ventures. This document might be useful to business managers in understanding and implementing IT services and supporting best practises. This document will be helpful for supplier organisation managers when creating service delivery and support agreements.

3.1.4 Four P's of Service Design:

The service design step transforms the needs and desires of the clients into the services they desire. Determine your target market and how to set your company's offerings apart from those of your rivals with the use of service design. When preparing a service, a service designer must take the four Ps into account:

1. **Peoples:** Individuals are in charge of offering IT services. These specialists ought to possess the abilities needed to render services.

2. **Products:** The tools, services, and technology utilised in the provision of and support for the services are referred to as products.

3. **Processes:** Processes manage and support the provided services to ensure that they live up to consumer expectations and set service levels. Every process needs to be measurable.

4. **Partners:** Suppliers, manufacturers, and vendors should be taken into account when designing services because they will be used to maintain the service once it is live.

3.2 SERVICE DESIGN PRINCIPLES

The entire business process includes IT Service Design. It's critical to have the appropriate interfaces and connections to design tasks. When creating new or modified services, it is crucial that the full service life cycle and ITSM processes are involved from the beginning. When a freshly developed service is abruptly provided for live operation, operational problems frequently result.

3.2.1 Goals:

1. Create services that are suited to organisational needs in order to deliver more effective IT and organisational solutions and services to fulfil corporate objectives based on quality, compliance, risk, and security criteria.

2. Create services that can be built and improved quickly, cheaply, and efficiently, and that can be curtailed or restricted when necessary.

3. Creating effective and efficient processes for the design, transition, operation, and improvement of high-quality IT services, together with ancillary tools, systems, and information, particularly the service portfolio, to manage services throughout their lifecycles.

4. Creating resilient and secure IT environments, applications, data/information resources, and infrastructures.

5. Creating measurements and methodologies for assessing the productivity and efficacy of design processes and the products they produce.

6. Creating and maintaining IT strategies, processes, policies, architectures, frameworks, and documents for designing high-quality IT solutions to satisfy the demands of the company both now and in the future.

7. Assist in the creation of rules and guidelines for all design fields.

3.2.2 Balanced Design:

In order to ensure that both functional needs and performance goals are met, the design of services must carefully balance any new business requirements. In order to balance everything, it is necessary to consider both the expenses of the new services and the resources that can be made available in the necessary amount of time.

1. Functions: the service or product and its components, including all necessary management and operational functionality, are both functional and high-quality.
2. Resources: available personnel, equipment, and financial resources
3. The timelines, or schedule.

Good communication between the various design activities and all other stakeholders, including the business and IT planners and strategists, must be ensured through the overall management of design activities to accomplish this.

- All designers get access to the most recent iterations of all pertinent business and IT plans and strategies.
- All business and IT strategies and plans are in accordance with all architectural and design documentation.

The architectures and designs are adaptable and allow :

- IT to act fast in response to changing business requirements.
- Adapt to all plans and regulations.
- Support the requirements of the Service Lifecycle's various phases.
- Provide new or modified, high-quality services and solutions that are in line with the demands and timelines of the company.

3.2.3 Identifying Service requirements:

By using a holistic approach to the design of a new service, the service design must consider all components of the service. In order to ensure that the services offered fulfil the functionality and quality of service expectations of the firm in all sectors, this approach should take into account the service, its components, and their interrelationships:

- The service's potential to grow to accommodate changing needs and further the long-term business goals.
- The business units and business processes that the service supports.
- The agreed-upon business capabilities and requirements, and the IT service.

- The operational level agreements that go along with the internally supported services and components (OLAs).
- The externally supported services, components, and related underlying contracts, which frequently have their own corresponding schedules or agreements.
- The metrics and performance measurements needed.
- The needed or regulated standards of security.

3.2.4 Identifying and documenting business requirements and drivers:

In order for IT to provide the most appropriate service catalog with a tolerable level of service quality, it must maintain accurate information about business requirements. The business drivers are the people, data, and tasks that help the company reach its goals. For IT to comprehend the operational, tactical, and strategic needs of the business, it must develop and maintain close, consistent, and appropriate interactions and information sharing. This data must be acquired and agreed upon in two key areas in order to ensure service alignment:

Information on the requirements of existing services - What adjustments will be needed to existing services based on:

- Needs and functional specifications for new facilities.
- Business dependencies, priorities, effects, and criticality are altered.
- Changes in service transaction volumes.
- The new business driver may result in higher service levels and targets, or lower service levels for older services, lowering their priority.
- For the management of services, additional information is required.

Information on the requirements of new services:

- Necessary amenities and skills.
- Management requirements and the information they need.
- Supported business processes, dependencies, priorities, importance, and impacts.
- Seasonal changes and business cycles.
- Service level objectives and specifications.
- Levels of business transactions, service transaction levels, user types and numbers, and expected future growth.

3.2.5 Design activities:

Changes in company requirements or bettering of services serve as the driving force behind all design activities. In order to maintain consistency and integration across the IT service provider organisation in all design activities, an organised and comprehensive approach to the design activities should be used.

- Collection, analysis, and engineering of requirements to make sure that business requirements are precisely outlined and accepted.
- Designing the right services, technologies, workflows, data, and process metrics to satisfy business needs.
- Review and updating of all service design-related procedures and materials, such as designs, plans, architectures, and policies.
- Coordination with all other design and planning roles, such as those involved in solution design.
- All design processes and deliverables are subject to risk assessment and management.
- Making sure that all business and IT strategies and policies are adhered to.

3.2.6 Design aspects:

For the design activities listed in the preceding section, a comprehensive, integrated strategy should be used. It should cover the design of:

- Service solutions that meet all agreed-upon functional requirements and have all necessary resources and capabilities.
- For the management and control of services throughout their lifecycle, use service management tools and systems, particularly the service portfolio.
- Tools needed to supply the services, including management structures and technology architectures.
- Processes required for the services' design, transition, operation, and improvement.
- Measurement techniques, methods, and metrics for processes, structures, and the parts that make them up.

The most important feature is that new or changed service solutions are created to satisfy evolving business requirements. Every time a new service solution is created, it needs to be compared to all previous ones to make sure that it interfaces and integrates with all current services. The next sections go into further information about these five service design facets. The service design should provide plans that take into account the design, transition, and operation of these five various aspects:

- The method used and the timelines involved.
- The new or modified solution's organisational effects on the business and IT.
- The solution's financial impact on the company, including the funding, expenses, and budgets needed.
- Planning communications with all interested parties and communicating in all its forms.
- The effect of the solution on new or current agreements or contracts.

3.2.7 Subsequent design activities:

The following tasks must be finished with the service design stage after developing the required service solution before the solution can go on to the service transition stage.

A) Evaluation of Alternative Solutions

If external supplier services and solutions are involved, a further review stage can be required. These things are included in this:

- Choosing a group of vendors and finishing the tendering procedure. This calls for the creation and completion of:
  - A Statement of Requirement (SoR) and/or Terms of Reference (ToR) document, as well as documentation of the service's scope.
  - Documents that include requests for information (RFI), proposals (RFP), quotes (RFQ), and tenders (ITT).
  - Creating and approving a set of criteria for evaluating suppliers and solutions, as well as a score system.
- Picking the preferred supplier(s) and their suggested solutions after evaluating and assessing the supplier's reply.
- Evaluation and costing of possible suppliers' potential proposals, technologies, solutions, and contracts, as well as perhaps discovering potential suppliers.

B) Procurement of the preferred solution

It's possible that no more components are needed for the solution. The steps are as follows if external suppliers take part in the preferred solution:

- Completing all required supplier checks on the chosen vendor.
- Completing the criteria and terms of any new contracts.
- Ensuring the application of all organisational policies.
- The purchase of the chosen option.

C) Develop the Service Solution

The service design is converted into a plan during the development phase. Each programme plan or project is in charge of supplying one or more service components, such as:

- The company's requirements.
- The approach to be taken in the creation and/or acquisition of the solution.
- The timeframes at play.
- The creation of the service and all of its individual parts, such as management and other operational processes including measuring, monitoring, and reporting.
- Plans for service and component testing.

3.2.8 Design constraints:

Every design has a number of limitations. These limitations, which affect many different industries, are a result of the business and service strategy. Because it does not fit within the limitations set, designers are not always free to create the greatest solution for the business. A less expensive alternative service should be found and approved by the company as there may not be enough money for the best solution.

Only a solution that satisfies all of the known constraints can be offered by the designer; otherwise, they must endeavour to relax or renegotiate some of the restrictions in exchange for a greater budget.

The necessity for excellent corporate and IT governance as well as other requirements to comply with rules, laws, and international standards are responsible for many of these external pressures. As a result, it is crucial that all designers are aware of them and make sure the designs and solutions they generate include all the required controls and capabilities.

3.2.9 Service oriented architecture:

Business processes and solutions should be designed and developed using the service-oriented architecture (SOA) methodology. Many firms adopt the SOA strategy, which is regarded as best practise, to increase their IT service delivery effectiveness and efficiency.

SOA is defined by OASIS as:

'A paradigm for organizing and utilizing distributed capabilities that may be under the control of different ownership domains. It provides a uniform means to offer, discover, interact with and use capabilities to produce desired effects consistent with measurable preconditions and expectations.'

A multinational collaboration that promotes the development, convergence, and adoption of e-business standards is called OASIS (Organization for the Advancement of Structured Information Standards). A company can benefit from SOA's promotion of the creation of reusable "self-contained" services and increase its agility. This fosters the creation of "shared services," which may be applied to numerous departments inside the organisation, in a flexible and modular manner. Business processes are being transformed by more and more companies into standardised "packaged services" that can be shared and used across many industries.

To create adaptable, reusable IT services that are common, can be shared, and are utilised in numerous business sectors, IT service providers should use the SOA and its guiding principles whenever possible. When employing this strategy, it's crucial that IT:

- Establishes what a service is and defines it.
- Recognises interfaces and relationships between services with understanding.
- Makes use of standards in the creation and description of services.
- Use standard equipment and technology.
- Examines and comprehends the effects of modifications to "shared services."

3.2.10 Business Service Management:

Business service management (BSM) is a method and strategy for integrating IT elements with organisational objectives. This can forecast how technology will effect business and how changes in business will impact technology. To improve the capabilities of the IT service provider to supply BSM, it is crucial to create a completely integrated service catalogue that includes business units, processes, and services, as well as their connections to and dependencies on IT services, technology, and components. An organisation of an IT service provider is able to:

- Align IT service delivery with corporate objectives and goals.
- Prioritize all IT tasks in accordance with their business effect and urgency to make sure that the most important business services and processes get the most attention.
- Boost corporate productivity and profitability by making IT procedures more effective and efficient.
- Support company governance requirements with proper IT governance and controls.
- Utilize and innovate the IT infrastructure as a whole to gain a competitive advantage.

- Boost user perception, customer satisfaction, and service quality.
- Make sure IT services are and remain in line with evolving business requirements.

3.2.11 Service Design Models:

The model picked for delivering IT services determines the model picked for designing IT services the most. A review of present capabilities and provisions should be done for all facets of the delivery of IT services before adopting a design model for a significant new service. All facets of the new service should be taken into account in this review, such as the:

- Business imperatives and needs.
- Demands, objectives, and specifications for the new service.
- Maturity of the processes used by the organisations currently involved.
- The organisations involved and their cultures.
- Components include IT infrastructure, applications, data, and services.
- Resources and financial constraints.
- Talents and staffing levels.

3.3 SUMMARY

In this chapter we have covered concept of Service Design and Service Design Principles in terms of Goals, Balanced Design, Identifying Service requirements, identifying and documenting business requirements and drivers, Design activities, Design aspects, Subsequent design activities, Design constraints, Service oriented architecture, Business Service Management, Service Design Models .

3.4 QUESTIONS

1. What is Service Design? State its Objectives and Aspects.
2. Define Service Design and brief about its purpose and uses.
3. What are four P's of Service Design?
4. Write note on Service Design principles.
5. Define Service Design and List and explain its goals.
6. What is Balanced Design?
7. What are Service Requirements? How o identify them?
8. How to Identifying and document business requirements and drivers?
9. Write short note on Design activities.

10. Write short note on Design aspects.
11. Explain in detail about Subsequent design activities.
12. Write short note on Design constraints.
13. Explain in brief about Service oriented architecture.
14. Explain in details about Business Service Management.
15. Write short note on Service Design Models.

3.5 REFERENCE FOR FURTHER READING

1. ITIL Foundation: ITIL 4 Edition (Itil 4 Foundation) by Axelos
2. ITIL v3 Foundation Complete Certification Kit.
3. ITIL v3 Service Strategy OGC/TSO

Web references

1. https://www.tutorialspoint.com/itil
2. https://www.simplilearn.com/tutorials

4

SERVICE DESIGN PROCESSES, CHALLENGES, CRITICAL SUCCESS FACTORS AND RISKS

Unit Structure:

4.1 Introduction

4.2 Service Catalogue Management

4.3 Service Level Management

4.4 Capacity Management

4.5 Availability Management

4.6 IT Service Continuity Management

4.7 Information Security Management

4.8 Supplier Management

4.9 Challenges

4.10 Risks

4.11 Summary

4.12 Questions

4.13 References

4.1 INTRODUCTION

Important data for the creation of new or changed services is primarily provided by these processes. Five design factors should be taken into account:

- The design of services, which takes into account all the agreed-upon functional specifications, resources, and capabilities.
- The process of creating systems and tools for managing and controlling services throughout their lifecycle, in particular the service portfolio.
- The creation of management systems and technological frameworks.
- Creating the procedures required for creating, implementing, and improving services, architectures, and procedures.
- Designing the metrics and measuring techniques for services, architectures, and the processes and parts that make them up.

The organised method should be used in each of the five areas to deliver quality, repeatable consistency, and ongoing progress across the organisation. No matter how basic, all IT service provider organisations already have certain components of their approach to these five issues. A review of the components that are already in place and function effectively should be done before beginning the implementation of enhancing activities and processes.

Key Processes of Service Design are:

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

4.2 SERVICE CATALOGUE MANAGEMENT

Service catalogue management makes certain that a service catalogue, or a list of all services, is created or maintained for all individuals involved in IT service management or who have the right to access it. Additionally, it offers correct details on all available services.

The following are the main goals of service catalogue management:

- To confirm that the agreed-upon services are precisely described, recorded, and documented.
- The service catalogue must be updated in tandem with the service portfolio in order to ensure that the business requirements serviced by the IT service team are defined in the catalogue.

The service catalogue provides assistance in two ways:

- Customers can choose services based on their needs thanks to it.
- IT professionals benefit from making assumptions about the types of technological services that should be offered to support business services.

Types: Broadly, there are two types of service catalogues:

- Business Service Catalogue (BSC): It includes information on all IT services from the perspective of the customer. Two other subcategories—Retail Catalogue and Wholesale Catalogue—can be created from it.

- Technical Service Catalogue (TSC): This document provides information on all IT services from an IT standpoint. Additionally, it outlines the connections between the components, shared services, supporting services, and CIs required to support the delivery of the service to the business.

4.3 SERVICE LEVEL MANAGEMENT

One of the key clearly defined procedures in the Service Design Process Group of the ITIL best practise framework is Service Level Management (SLM). It is the procedure in charge of continuously identifying, monitoring, and reviewing the SLA-specified IT service standards. By ensuring that appropriate contracts are reached with internal IT support providers and external suppliers in the form of operational level agreements (OLAs) and Underpinning Contracts (UCs) / subcontracts, the ITIL SLM process aids in achieving the desired level of service.

Scope:

In order to anticipate and plan the resource requirements, the Service Level Management Process (SLM) collaborates closely with the management of availability and capacity. to ensure that the necessary quality and service standards are attained utilising the resources agreed upon with finance management, and directly tied to event management and problem management.

Process Objective:

Creating services in accordance with agreed-upon service level objectives and negotiating service level agreements with consumers. Additionally, service level management is in charge of making sure that all operational level contracts and agreements are valid and that service levels are tracked and reported.

Activities:

- Deciding on, negotiating, drafting, and reaching an agreement on the requirements for new or modified services.
- All services are managed and reviewed to ensure they meet operational service SLAs.
- All operational services are being tracked and their service performance measured against the SLA goals.
- Customer satisfaction data collection, evaluation, and improvement in collaboration with BRM.
- Scope of Service, SLAs, OLAs, and supporting contracts are all being examined, revised, and documented.

Sub-Process:

1) Maintainance of the SLM Framework: The fundamental framework for service level management is upheld by the SLM Framework's sub-process.

2) Identification of Service Requirements: Used to record the demands or intended outcomes for new services or significant service adjustments from the customer's perspective.

3) Agreements Sign-Off and Service Activation: After the service transition is complete, make sure that all pertinent contracts are signed, and assess whether the requirements for service acceptance have been met.

4) Service Level Monitoring and Reporting: Used for reporting, to track the service levels attained and evaluate them against the agreed-upon service level targets.

Roles & Responsibilities:

- Service Level Manager: This position serves as the ITIL Service Level Management Process's Process Owner. This position is in charge of making sure that all Operational Level Agreements, Underpinning Contracts, and ITIL Service Management processes are appropriate and in line with achieving the specified service level goals. The service level manager keeps track of and updates all stakeholders on the service levels reached.

- Service Owner: The Service Owner is in charge of providing a certain service within the specified service levels. Typically, while negotiating operational level agreements, this position serves as the Service Level Manager's opponent (OLAs). The Service Owners are frequently seen in charge of a group of technical experts or an internal support group.

4.4 CAPACITY MANAGEMENT

A procedure called capacity management is used to make sure that the service provider has enough IT resources to cost-effectively address present and future business requirements. It assists in determining how services are now in demand and how those demands may evolve over time.

Scope:

The Capacity Management Process gives businesses the knowledge they need to choose which components to upgrade, when to improve them, and how much it will cost. This knowledge is about the actual and anticipated utilisation of each component.

When planning the resource capacity needed to sustain the intended level of service, ITIL Capacity Management closely collaborates with other ITIL processes like Service Level Management, IT Service Continuity

Management, and Availability Management to access the present IT infrastructure. Coordinates the financial management process to gather data on budget allocation for all resource types and to alert the organization's financial department if any further budget allocation is necessary.

Process Objective: ensuring that IT infrastructure and service capabilities are sufficient to meet the agreed-upon service level targets in a timely, cost-effective way. Capacity management makes plans for the short-, medium-, and long-term needs of the business while accounting for all the resources needed to supply the IT service.

Activities:

- Designing a service in a way that it will achieve Service Level Agreement (SLA) goals after being put into use.
- Controlling resource performance to ensure services reach SLA goals.
- Periodically assessing existing service performance and capacity.
- Aiding in the diagnosis of problems with performance.
- The development and upkeep of a capacity plan that is in line with the organization's strategic aims.
- Collecting and analysing information on service usage, and, if necessary, documenting new requirements.
- Directing the execution of service capacity changes.

Process Steps:

Step 1 - Gather the Data: This step entails a few tasks, such as consulting with the business to identify the required service levels and quality standards. Then, with the help of Demand Management, forecast the demand based on user roles and incorporate information from the Finance Management team to calculate the expenses.

Step 2 - Design a Service and Create Agreement: After gathering all of the aforementioned data, Service Level Management is used to create a SLA that can be agreed upon by all parties.

Step 3 - Build the Service: The service itself is built in this step. In order to support the new service, this entails creating the required IT infrastructure, procedures, and documentation.

Step 4 - Operation: The service's go-live date is set once it has been constructed and everyone has confirmed that it satisfies the Acceptance Criteria (SAC).

Sub-Process:

1) Business Capacity Management: Utilized to transform business requirements into IT requirements is business capacity management. Additionally, it guarantees that future performance and capacity requirements can be met. It estimates shifting demands for capacity and tactically manages those demands.

2) Service Capacity Management: used to manage, regulate, and foresee the capacity and performance of operational services. To ensuring that the performances and capacities of services reach their predetermined goals, this involves taking proactive and reactive action.

By monitoring performance and comparing it to standards established in Service Level Agreements (SLAs) or Service Level Requirements, this aim is met (SLRs). For instance, if the company plans to buy more desktops and laptops, they should also think about recruiting more IT support engineers.

3) Component Capacity Management: It is used to manage, regulate, and forecast the efficiency, capacity, and performance of certain IT resources and components.

With the help of performance monitoring and forecasting, the overall amount of service downtime is to be decreased. For instance, if the organisation notices that more softcopy and software are being used, it may be time to upgrade the hard drive, RAM, and CPU of the PC.

4) Capacity Management Reporting: This sub-process, referred to as Capacity Report, is in charge of producing reports on service information, resource capacity, utilisation, and performance. Then, for the purposes of planning and monitoring, this report is distributed to other Management processes and IT Management.

Roles and Responsibilities:

- Capacity Manager: The capacity manager role is in charge of making sure that services and infrastructure have enough capacity and can meet the set performance targets in a timely and cost-effective manner. All resources necessary to provide the service, as well as planning in accordance with the short-, medium-, and long-term needs of the firm.

4.5 AVAILABILITY MANAGEMENT

The implementation of ITIL Availability Management makes sure that the services are accessible when needed. This typically indicates that all services are provided in accordance with service level agreements (SLAs). The availability management team routinely evaluates the needs for the availability of business processes in order to achieve this. Then they make sure that there are the most economical backup plans. To ensure that they satisfy the demands of the business, these strategies are periodically tested.

Scope:

The component failure impact analysis (CFIA) and service outage analysis (SOA) processes both heavily rely on availability management.

Typically, the Availability Management team isolates the issue's root cause, examines any associated trends, and then implements the necessary measures to guarantee service availability in accordance with SLAs.

To plan for the infrastructure requirements necessary to satisfy the specified service level and quality, the ITIL Availability Management process collaborates with Capacity Management, Service Level Management, and IT Service Continuity Management.

In order to support them in achieving the operation level service targets and quality requirements, it also closely collaborates with the Incident Management and Event Management processes.

Process Objective: Defining, analysing, planning, monitoring, and improving every facet of the availability of IT services. It is in charge of ensuring that all IT infrastructures, processes, tools, roles, etc. are suitable for the established availability targets.

Components:

The accuracy of service availability is determined by six components of availability management. These are listed below:

- **Availability:** A service's or component's capacity to deliver the agreed-upon functionality when necessary is evaluated. It is the ability of a service, component or CI to perform its agreed function when required. It is often measured and reported as a percentage:

$$\text{Availability (\%)} = \frac{\text{(Agreed Service Time (AST) – downtime)}}{\text{Agreed Service Time (AST)}} \times 100\ \%$$

Note: Downtime should only be included in the above calculation when it occurs within the Agreed Service Time (AST). However, total downtime should also be recorded and reported.

- **Reliability**: - Is the capacity of a service or component to perform at a predetermined level under specified circumstances. It is a measure of long a service, component or CI can perform its agreed function without interruption. The reliability of the service can be improved by increasing the reliability of individual components or by increasing the resilience of the service to individual component failure (i.e. increasing the component redundancy, e.g. by using load-balancing techniques). It is often measured and reported as Mean Time Between Service Incidents (MTBSI) or Mean Time Between Failures (MTBF):

$$\text{Reliability (MTBSI in hours)} = \frac{\text{Available time in hours}}{\text{Number of breaks}}$$

$$\text{Reliability (MTBF in hours)} = \frac{\text{Available time in hours} - \text{Total downtime in hours}}{\text{Number of breaks}}$$

- **Maintainability:** Describes a service or component's capacity to continue operating or to be brought back to a functioning state. It is a measure of how quickly and effectively a service, component or CI can be reported to normal working after a failure. It is measured and reported as Mean Time to Restore Service (MTRS) and should be calculated using the following formula:

$$\text{Maintainability (MTRS in hours)} = \frac{\text{Total downtime in hours}}{\text{Number of service breaks}}$$

MTRS should be used to avoid the ambiguity of the more common industry term **Mean Time To Repair (MTTR),** which in some definations includes only repair time, but in others includes recovery time. The downtime in MTRS covers all the contributory factors that make the service, component or CI unavailable:

- Time to record
- Time to respond
- Time to resolve
- Time to physically repair and replace
- Time to recover

Example: A situation where a **24 × 7** service has been running for a period of 5, 020 hours with only two breaks, one of six hours and one of 14 hours, would give the following figures:

Availability = (5,020-(6+14)) / 5,020 x 100 = 99.60%

Reliability (MTBSI) = 5,020 / 2 = 2,510 hours

Reliability (MTBF) = 5,020-(6+14) / 2 = 2,500 hours

Maintainability (MTRS) = (6+14) / 2 = 10 hours

- **Serviceability:** Describes a supplier's capacity to uphold a service's or a component's availability under a third-party contract. Is the ability of a third-party supplier to meet the terms of their contract. Often this contract will include agreed levels of availability, reliability and/or maintainability for a supporting service or component.
- **Resilience:** It is a technique for maintaining the dependability of services in the event of a significant failure, and it also calculates the likelihood of such a failure. The necessity for service redundancy is highlighted in this sentence.
- **Security:** Security relates to the privacy, accuracy, and accessibility of any data used to provide services.

Activities:

Availability Management process includes two types of activities, (i) Reactive and (ii) Proactive.

(i) Reactive Activities: Reactive Availability Management includes activities such as monitoring, measuring, analysis and management of all events, incidents, and problems causing service unavailability. These activities are generally performed by operational roles.

(ii) Proactive Activities: Proactive Availability Management includes proactive planning, design, and monitoring of services to improve the availability.

These activities are typically performed by design and planning roles.

Proactive activities can be further divided into two categories: Service Availability & Component Availability.

Activities performed under this proactive category are:

- Participate in IT infrastructure design.
- Monitor actual IT availability achieved.
- Create, maintain & review Availability Plan.
- Schedule Availability Testing.
- Attend CAB meetings.
- Assessment & Testing after a major business change.
- Assess & Manage Risk in an economically viable way.

Sub-Process:

1) Design Services for Availability: As its name implies, this sub-process is in charge of creating the technical features and procedures necessary to uphold the agreed-upon availability criteria.

2) Availability Testing: All availability, resilience, and recovery measures must be tested on a regular basis. This sub-process is in charge of planning and organising those tests.

3) Availability Monitoring and Reporting: Used to keep track of the present success rates of services and components in terms of availability, compare those results to the established availability benchmarks, pinpoint improvement areas, and create a thorough report. Additionally, it distributes the report for decision-making to other Service Management procedures and IT Management.

Roles and Responsibilities:

- Availability Manager: All aspects of the availability of IT services and components must be defined, analysed, planned, measured, and improved in accordance with the responsibilities of this job. To ensure that all IT infrastructure, procedures, tools, roles, etc. are suitable for attaining the stated service level targets for availability, Availability Manager must work in tandem with Capacity Manager.

4.6 IT SERVICE CONTINUITY MANAGEMENT (ITSCM)

To ensure business continuity, ITSCM prepares the organisation to recover from catastrophes and significant emergencies.

Through proactive disaster and emergency planning and recurring disaster and emergency management drills, it benefits the organisation in two ways. The organization's business continuity management must be integrated with the installation of ITSCM.

Scope:

A service provider may not be able to fully benefit from the service if service continuity cannot be maintained and/or restored within SLA.

To identify potential threats to service continuity and take preventive measures, ITIL Continuity Management closely collaborates with Risk Management and Information Security Management.

Process Objective: Control hazards that could significantly affect IT services. By lowering the risk of catastrophic events to an acceptable level and making plans for IT service recovery, ITSCM makes sure that the IT service provider can always deliver the minimal level of service that was previously agreed upon. Designing ITSCM with Business Continuity Management in mind is a good idea.

Activities:

The process of managing IT service continuity generally consists of four steps or activities:

1. Initiation: For ITSCM strategy and plans, initiation entails defining policy, scope, terms of reference, project planning, and resource allocation.
2. Requirements and Strategy: To identify the assets and their threats and vulnerabilities, business impact analysis and risk assessments are carried out for each of the IT services in this step. Additionally, the Services that need to be retrieved are given priority.

3. Implementation: This stage comprises testing the implementation of the contingency plan, designing the risk reduction, implementing the risk reduction measures, and evaluating recovery possibilities.
4. Ongoing Operation: This Operation stage takes care of testing, reviewing, and revising the ITSCM plans on a regular interval, change control of ITSCM plans, and also responsible for user education and awareness.

Sub-Process:

There are four subprocesses in the IT Service Continuity Management (ITSCM) Process.

1) ITSCM Support: This sub-process makes sure that every IT employee who is in charge of responding to disasters is aware of their precise tasks and has immediate access to all pertinent information when a crisis strikes.
2) Develop Continuity Services: This sub-process is used to design acceptable and financially viable continuity mechanisms and procedures to satisfy the agreed-upon business continuity targets. Plans for risk reduction and recovery are included in this.
3) ITSCM Training and Testing: This makes sure that all preventative measures and recovery systems created for disaster recovery are routinely tested. Additionally, it makes sure that every member of the IT staff has the proper disaster recovery training.
4) ITSCM Review: This step is used to check if the ITSCM testing is proceeding according to plan. Additionally, to make sure that the current catastrophe avoidance measures continue to meet the needs of the firm.

Roles and Responsibilities:

- IT Service Continuity Manager: It is in charge of mitigating risks that could have a significant negative impact on IT services. By lowering the risk to an acceptable level and preparing for the recovery of IT services, this role also ensures that a minimum agreed service level will be offered at the time of the disaster. The IT Service Continuity Manager collaborates closely with the Risk Manager & Availability Manager to accomplish the aforementioned goal.

4.7 INFORMATION SECURITY MANAGEMENT

The approach and controls for IT security within a company are described in the ITIL Information Security Management Process.

Scope:

IT security and business security are aligned using information security management (ISM), which also makes sure that information security is effectively managed across all services and service management tasks. ISM is closely related to other ITIL processes like IT service continuity management and availability management.

Process Objective: To ensure the confidentiality, integrity and availability of information, data and IT services of an organization. Information security management is usually part of a more comprehensive organizational approach to security management than the IT service provider.

Activities:

(i) Plan: The objective of this activity is to devise and recommend the appropriate security measures, based on an understanding of the organization's requirement.

(ii) Implement: This key element ensures that appropriate procedures, tools, and controls are in place to support the ITIL Information Security Management Policy and Plan.

(iii) Evaluation: This phase is responsible for measuring the success of the security implementation. For doing this it carries out regular technical security audits of IT systems.

(iv) Maintain: This phase takes the security evaluation results and suggests improvements on security implementation, and on security agreements as specified in, for example, SLAs and OLAs.

Remember that, these above phases are NOT one-time activity. These are continuous and cyclic activities, as shown in the following diagram.

Roles:

- Information Security Manager: The confidentiality, integrity, and availability of an organization's resources, information, data, and IT services are the responsibility of the information security manager. Compared to an IT service provider, this function has a broader range of responsibilities that typically cover the complete organization's monitoring and management of paper (hard copy), building access, phone calls, etc.

4.8 SUPPLIER MANAGEMENT

The ITIL Supplier Management process is all about managing suppliers and the services they supply, to provide seamless quality of IT Services in an economical manner.

Scope:

Getting value for money from suppliers and contracts is the main goal of supplier management. All suppliers should be managed under supplier management, and it should be made sure that all contracts with suppliers adhere to business requirements, SLAs, and SLRs. To make sure that suppliers provide the level of service necessary to fulfil service levels and quality goals, the ITIL Supplier Management Process closely collaborates with Service Level Management and Availability Management.

Process Objective: to make certain that all agreements with suppliers support the needs of the company and that all suppliers uphold their end of the bargain.

Activities:

- Put in place and uphold the supplier policy.
- Management of suppliers under subcontract.
- Contracts selection, categorization, and risk analysis.
- Continue to use a supporting Supplier and Contract Management Information System and a supplier policy (SCMIS).
- Supplier Management for SCMIS.
- In addition to developing, negotiating, and agreeing on contracts with suppliers and managing them throughout their lifecycles, standard contracts, terms, and conditions should be maintained.

What is a Contract?

A written agreement that is legally enforceable between a service provider and a consumer to perform or receive specific services is known as a contract. A contract with the supplier would typically include all the relevant details, like the type of service, SLA targets, service fee, etc. The formal phrase for assigning such a service to a third-party source is "outsourcing".

ITIL Contract Management and Types of Supplier Contracts:

The following list of supplier-contract and outsourcing kinds is not all-inclusive.

Co-sourcing: Co-sourcing is a loosely defined form of outsourcing in which a number of outsourcing companies collaborate to co-source important lifecycle components.

Partnership or multi-sourcing: A formal agreement between two or more organisations to collaborate on the design, development, transition, maintenance, operation, and support of IT services is known as multi-sourcing or a partnership.

Business Process Outsourcing (BPO): refers to formal agreements under which a company assigns external organisations the administration of one or more of its business processes or functions.

Knowledge Process Outsourcing (KPO): is a modern improvement to business process outsourcing that entails the use of highly developed analytical and specialised subject abilities to deliver business expertise.

Application Service Provision: is the process through which outside companies deliver shared computer-based services to client companies over a network.

Underpinning Contract: contract between a service provider and a third party provider for the receipt of certain services is known as the underlying contract.

Sub-Process: Supplier Management has six sub-processes operating under it.

1) Providing the Supplier Management Framework: Defines the guidelines and standards for procurement of services and products. This also includes the terms of the Supplier Strategy and the preparation of standard Terms and Conditions.

2) Assessment or Evaluation of new Suppliers and Contracts: Responsible for evaluating prospective suppliers in accordance with the Supplier Strategy, and also to select the most suitable supplier.

3) Establishing new Suppliers and Contracts: This process is used to negotiate and sign a binding agreement or contract with the suppliers. This process is typically used for significant investments, either in externally provided services or in technology.

4) Processing of Standard Orders: Responsible for processing pre-defined orders and/or items for commodity products and services within the boundaries of existing contract frameworks.

5) Supplier and Contract Review: Responsible for verifying if the contractually agreed performance is actually being delivered by suppliers, and to define improvement measures if required.

6) Contract Renewal or Termination: It is used to carry out the regular assessment of existing contracts to check if they are still relevant with current requirements. And also to do the renewals or termination of contracts based on the assessment results.

Roles and Responsibilities:

- Supplier Manager: The Supplier Manager role is responsible for ensuring that value for money is obtained from all suppliers. Supplier Manager also makes sure that contracts with suppliers fulfil the business needs, and that all suppliers are meeting their contractual commitments.

4.9 CHALLENGES

With every endeavour, difficulties or challenges must be met and overcame. This is especially true when creating new services and procedures that satisfy the needs of all company stakeholders. Experience has shown that the following assists in overcoming the difficulties:

- Recognizing and making sure that company priorities and requirements are taken into account when designing processes and services.

- Communication will be essential for listening to the needs and requirements of the individual as well as for describing what is happening and how it affects people. Talking to people about topics pertaining to their daily jobs is essential.
- Include as many individuals as you can in the design process. The creation of focus groups or steering committees can be quite effective in finding the best answer and winning over more people.
- Participation from senior management and employees at all levels.

Examples of difficulties that could be encountered include:

- The purchased infrastructure has subpar monitoring and control capabilities.
- Utilising a range of applications and technology.
- Changing or unclear business needs
- Lack of understanding of service objectives and commercial requirements.
- The design does not incorporate some facilities.
- Unplanned efforts and purchases are the outcome of planning opposition or a lack of planning.

4.10 RISKS

The design phase of the service life cycle is directly responsible for a number of risks. These hazards must be recognised in order to prevent realisation. These consist of:

- The service design or service management processes will not function if any of the PFSs for service design are not met.
- Full maturity in other processes won't be possible to reach if one process has a low maturity level.
- The business's needs for IT personnel are unclear.
- Business time constraints prevent giving enough time for service design.
- Inadequate testing, which results in bad design and poor implementation.
- In an effort to gain a competitive edge, the corporation strikes the wrong balance between innovation, risk, and expense.
- Customers, partners, and infrastructure are insufficient to satisfy the needs of the entire organisation.

- The strategies and policies are either unavailable or their content is unclear.
- The budget and resources allocated for service design activities are insufficient.
- Insufficient design staff training or insufficient design phase time.
- Insufficient engagement or dedication to the application's functional development, which results in insufficient focus on the needs of service design.

4.11 SUMMARY

In this chapter we have covered Service Catalogue Management, Service Level Management, Capacity Management, Availability Management, IT Service Continuity Management, Information Security Management, Supplier Management, Challenges and Risks.

4.12 QUESTIONS

1. What is Service Design Process? List the Key Processes of Service Design.
2. Explain in details Service Catalogue Management process of Service design.
3. Explain in details Service Level Management process of Service design.
4. Explain in details Capacity Management process of Service design.
5. Explain in details Availability Management process of Service design.
6. Explain in details IT Service Continuity Management process of Service design.
7. Explain in details Information Security Management process of Service design.
8. Explain in details Supplier Management process of Service design.
9. Explain the sub processes in Service Level Management.
10. List and explain the Terminologies & Definitions in Service Level Management.
11. Explain the sub processes in Capacity Management.
12. List and explain the Terminologies, Roles in Capacity Management process.
13. Explain the components of Availability Management process.

14. Write short note on activities of Availability Management process.
15. List and explain the Terminologies & Definitions in Availability Management.
16. List and explain the Terminologies & Definitions in IT Service Continuity Management process.
17. List and Explain activities and sub processes of IT Service Continuity Management process.
18. List and Explain activities of Information Security Management process.
19. List and explain the Terminologies & Definitions in Information Security Management process.
20. What are the activities of Information Security Management process?
21. What is a Contract? Explain Contract Management and Types of Supplier Contracts.
22. List and Explain sub processes of Information Security Management process.
23. List and explain the Terminologies & Definitions in Information Security Management process.
24. Explain in detail Challenges in Service Design Process.
25. Explain in detail Risks associated with Service Design Process.

4.13 REFERENCE FOR FURTHER READING

1. ITIL Foundation: ITIL 4 Edition (Itil 4 Foundation) by Axelos
2. ITIL v3 Foundation Complete Certification Kit.
3. ITIL v3 Service Strategy OGC/TSO

Web references

1. https://www.tutorialspoint.com/itil
2. https://www.simplilearn.com/tutorials

5

SERVICE TRANSITION AND SERVICE TRANSITION PRINCIPLES

Unit Structure:

5.0 Objective

5.1 Service Transition Fundamentals

5.2 Principles Supporting Service Transition

5.3 Policies for Service Transition

5.3.1 Define and implement a formal policy for Service Transition

5.3.2 Implement all changes to services through Service Transition

5.3.3 Adopt a common framework and standards

5.3.4 Maximize re-use of established processes and systems

5.3.5 Align Service Transition plans with the business needs

5.3.6 Establish and maintain relationships with stakeholders

5.3.7 Establish effective controls and disciplines

5.3.8 Provide systems for knowledge transfer and decision support

5.3.9 Plan release and deployment packages

5.3.10 Anticipate and manage course corrections

5.3.11 Proactively manage resources across Service Transitions

5.3.12 Ensure early involvement in the service lifecycle

5.3.13 Assure the quality of the new or changed service

5.3.14 Proactively improve quality during Service Transition

5.4 Summary

5.5 Questions

5.6 References

5.0 OBJECTIVES

After studying this chapter, you will be able:

- To Understand the basic fundamentals of service transition stage
- To develop and improve the capabilities used to implement new or changed (modified) IT services
- To discuss the principles to be followed at transition stage
- To explain policies for service transition stage.

5.1 SERVICE TRANSITION FUNDAMENTALS

Development and improvement of capabilities for transitioning new and changed services into operations. Service transition is concerned with management of change and with the introduction of new and changed services into the environment. The service transition stage in the service life-cycle has to make sure that the new and modified or retired services meet the expectations of the business as previously agreed upon in the service strategy and service design stage of the ITIL life cycle.

5.1.1 PURPOSE, GOALS AND OBJECTIVES:

The purpose of Service Transition is to:

- Plan and manage the capacity and resources required to package, build, test and deploy a release into production and establish the service specified in the customer and stakehold errequirements
- Provide guidance on the development and improvement of the transition capabilities to modified and new services in the live environment.
- Establish and maintain the integrity of all identified service assets as they evolve through the Service Transition stage.
- Provide good-quality knowledge and information so that change, Release and Deployment Management provide fast effective decisions about promoting a release through the test environments and then into production.
- Provide efficient repeatable build and install action mechanisms that can be used to deploy releases to the test and production environments and be rebuilt if required to restore service
- Ensure that the service can be managed, operated and support edin accordance with the requirements and constraints specified within the Service Design.

The goals of Service Transitionare to:

- Establish expectations of customers on how the performance and use of the new or changed service can be used to enable business change.
- Enable the integration of release into their business processes and services.

- Reduce variations in the predicted and actual performance of the transitioned services
- Reduce the known errors and minimize the risks during transitioning the new or changed services into production.
- Ensure that the service can be use din accordance with the requirements and constraints specified within the service requirements.

The objectives are to:

- Plan and manage the changes in service efficiently and effectively into production within the predicted cost, quality and time estimates.
- Ensure there is minimal unpredicted impact on the production services, operations and support organization.
- Increase the customer, user and Service Management staff satisfaction with the Service Transition practices.
- Increase proper use of the services and under lying applications and technology solutions.
- Provide clear and comprehensive plans that enable the customer to align their activities with the Service Transition plans.

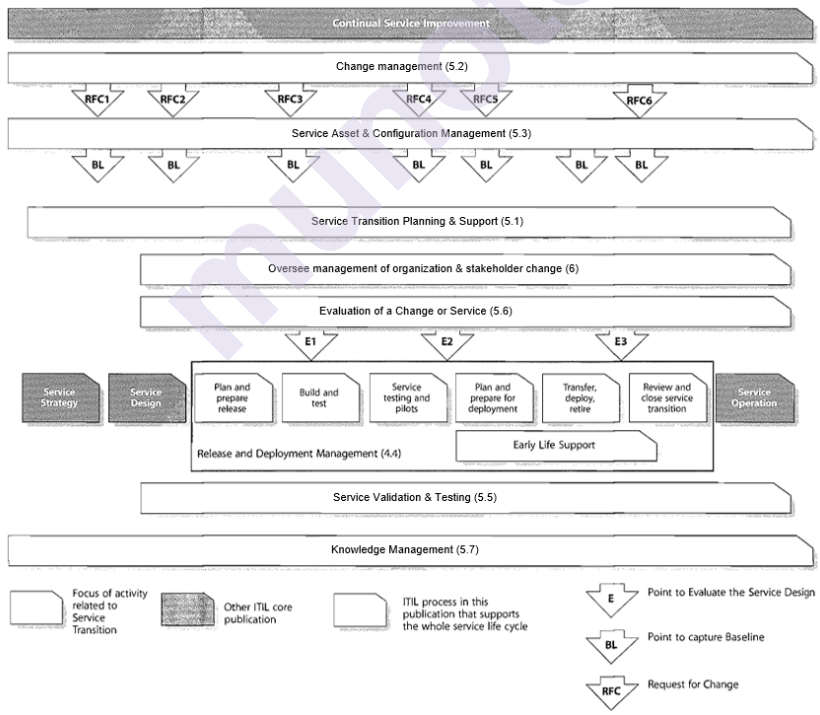

Figure 5.1 The scope of Service

5.1.2 SCOPE:

The scope of Service Transition includes the management and coordination of the processes, systems and functions to package, build, test and deploy a release into production and establish the service according to the requirements.

The scope of the Service Transition lifecycle stage is shown in Figure 5.1. Service Transition activities are shown in the white boxes. The black boxes represent activities in the other ITIL.

In some situations, some activities may not apply. For example, the transfer of a set of services from one organization to another may not involve release, planning, build, test and acceptance.

5.2 SERVICE TRANSITION PRINCIPLES

These principles can be followed regardless of the organization, but the approach may differ from organization to organization adapted to circumstances such as distribution, size, resources and culture

5.2.1 PRINCIPLES SUPPORTING SERVICE TRANSITION :

Service Transition is supported by underlying principles that evolve from Service Strategy considerations and underpin the Service Transition practices and approach. These principles, help to understand what a service is and how it delivers value to the business, provide the foundation for Service Transition.

1. DEFINE A SERVICE:

The value of a service is defined within the context of customers and contracts within an eco-system that is commonly known as the business environment.

ITIL defines a Service as "a means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific costs and risks."

e.g. a "backup service" means that you don't have to care about how much tapes, disks or pen drive cost and you don't have to worry if one of the staff is sick or on leave.

Resources are tangible and intangible assets that are owned or controlled by the service provider or the organization for conversion into final products or services that are utilized by customers. Resources are converted into goods and services using knowledge, skills, experience, processes, systems and technologies, which are by themselves a special category of intangible assets called capabilities.

Figure 5.2 illustrates the service provider assets used to deliver services to the business and customers.

The term asset is used to refer either to capabilities or resources, or both depending on the surrounding context.

Services are a means for providing value to customers as shown in **Figure 5.3.** They are a means by which one business unit delivers value to one or more other business units, or to sub-units within itself. In this publication, business units that deliver services are commonly referred to as service providers or service units and those that use services are called customers or simply business units.

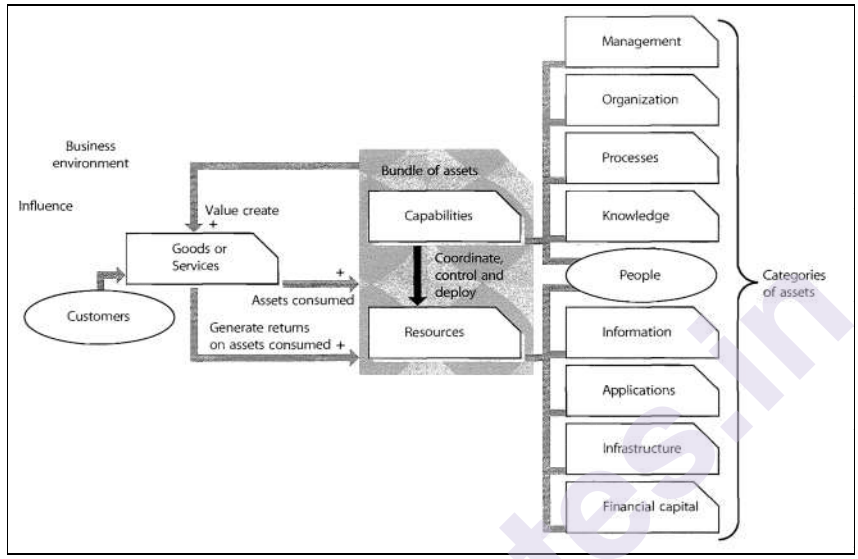

Figure 5.2: Service assets required to deliver services to the business

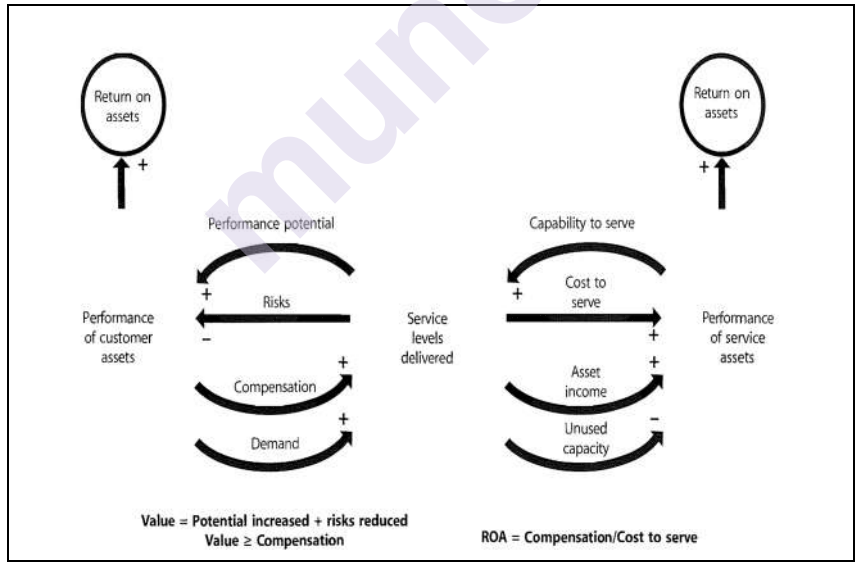

Figure 5.3: Service provide value by increasing the performance of customer assets and removing risks

2. SERVICE UTILITIES AND WARRANTIES:

Utility is perceived by the customer from the attributes of the service that have positive effect on the performance of task associated with the desired business outcomes. This is fir for purpose.

Other way ofdefining utility of a service is in terms of the business outcomes that customers expect the service to support and the constraints it will remove. This utility is in the form of enhancing or enabling the performance of the customer assets, and contributing to the realization of business outcomes.

Utility is generally stated in terms of:

- Outcomes supported
- Ownership costs and risks avoided

Warranty ensures the utility of the service is available as needed with sufficient capacity, continuity, and security. Value of warranty is communicated in terms of level of certainty.

Warranty is usually defined in terms of availability, capacity, continuity, and security of the utilization of the services.

.Three characteristics of warranty:

- Provided in terms of the availability and capacity of services.
- Ensures that customer assets continue to receive utility, even if at degraded service levels, through major disruptions or disasters.
- Ensures security for the value-creating potential of customer assets.

5.3 POLICIES FOR SERVICE TRANSITION

The following aspects constitute fundamental principles of Service Transition. Their endorsement and visible support from senior management contributes to the overall effectiveness.

5.3.1 DEFINE AND IMPLEMENT A FORMAL POLICY FOR SERVICE TRANSITION:

Policy:

- A formal policy for Service Transition should be defined, documented and approved by the management team, who ensure that it is communicated to all relevant suppliers and partners and throughout the organization.

Principles:

- Policies should clearly state the objectives and any non-compliance with the policy shall be fixed.

- Align the policies with the overall governance framework, organization and Service Management policies.
- 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.
- Use processes that integrate teams; blend competencies while maintaining clear lines of accountability and responsibility.
- Deliver changes in releases.
- Address deployment early in the release planning and design stages.

Best practice:

- Obtain formal sign off from the management team, sponsors and decision makers involved in developing the policy.

5.3.2 IMPLEMENT ALL CHANGES TO SERVICES THROUGH SERVICE TRANSITION:

Policy:

- All changes to the Service Portfolio or service catalogue are implemented through Change Management and the changes are defines and agreed upon in the Service Transition lifecycle stage.

Principles:

- A single focus for changes to the production services minimizes the likelihood of conflicting changes and potential disruption to the production environment. People that do not have the authority to make a change or release into the production environment should be prevented from having access.
- Familiarity with the organization of Service Operations increases mobilization and enables organizational change.
- Increasing knowledge and experience of the services and production environment improves efficiency.
- Each release package will be designed and governed by a Request for Change raised via the Change Management process to ensure effective control and traceability.
- Standardized methods and procedures are used for efficient and prompt handling of all changes, in order to minimize the impact of change-related incidents on business continuity, service quality and re-work.
- All updates to changes and releases are recorded against service assets and/or configuration items in the Configuration Management System.

Best practices:

- The change definition is clearly defined.
- Distinguished Internal and external changes.
- Changes are justified through the development of a clear Business Case.
- Changes to services are defined in a Service Design Package that Service Transition can use to measure the actual vs predicted progress andperformance.
- The current process of Change Management may need to be standardized and enforced.
- Management commitment to enforcing the process isessential, and it must beclearly visible to allstakeholders.
- Auditing settings aims to identify unauthorized changes.
- Do not accept late requests for modification which cannot be managedproperly.

5.3.3 ADOPT A COMMON FRAMEWORK AND STANDARDS:

Policy:

- Base Service Transition on a common framework of standard re-usable processes and systems to improve integration of the parties involved in Service Transition and reduce variations in the processes.

Principles:

- Implement best practices from industry as the basis of standardization to enable integration across the supply chain.
- Control the Service Transition framework and standards under Change and Configuration Management.
- Ensure processes are adopted consistently by scheduling regular reviews and audits of the Service Management processes.

Best practices:

- Publish standards and best practices for Service Transition.
- Provide a framework for establishing consistent processes for assuring and evaluating the service capability and risk profile before and after a release is deployed.
- Provide supporting systems to automate standard processes in order to reduce resistance to adoption.

- Ensure there is management understanding of the need for standard ways of working by developing and delivering improvements based on a sound Business Case.
- Establish the level of management and stakeholder commitment and take action to close any gaps.
- Continually plan how to improve the buy-in to adopting a common framework and standards.

5.3.4 MAXIMIZE RE-USE OF ESTABLISHED PROCESSES AND SYSTEMS:

Policy:

- Service Transition processes are aligned with the organization's processes and related systems to improve efficiency and effectiveness and where new processes are required; they are developed with re-use in mind.

Principles:

- Re-use established processes and systems wherever possible.
- Capture data and information from the original source to reduce errors and aid efficiency.
- Develop re-usable standard Service Transition models to build up experience and confidence in the Service Transition activities.
- Implement industry standards and best practices as the basis of standardization to enable integration of deliverables from many suppliers.

Best practices:

- Integrate the Service Transition processes into the quality management system.
- Use the organization's programme and project management practices.
- Use existing communications channels for Service Transition communication.
- Follow human resources, training, finance and facilities management processes and common practices.
- Design the Service Transition models that enable easy customization to suit specific circumstances.
- Structure models such that a consistent approach is repeated for each target service unit or environment with local variation as required.

5.3.5 ALIGN SERVICE TRANSITION PLANS WITH THE BUSINESS NEEDS:

Policy:

- Align Service Transition plans and new or changed service with the customer and business organization's requirements in order to maximize value delivered by the change.

Principles:

- Set customer and user expectations during transition on how the performance and use of the new or changed service can be used to enable business change.
- Provide information and establish processes to enable business change projects and customers to integrate a release into their business processes and services.
- Ensure that the service can be used in accordancewith the requirements and constraints specified within the service requirements in order to improve customer and stakeholder satisfaction.
- Communicate and transfer knowledge to the customers, users and stakeholders in order to increase their capability to maximize use of the new orchanged service.
- Monitor and measure the use of the services andunderlying applications and technology solutions during deployment and early life support in order to ensure that the service is well established before transition closure.
- Compare the actual performance of services after a transition against the predicted performance defined in Service Design with the aim of reducing variationsin service capability and performance.

Best practices:

- Adopt programme and project management best practices to plan and manage the resources required to package, build, test and deploy a release into production successfully within the predicted cost, quality and time estimates.
- Provide clear and comprehensive plans that enable the customer and business change projects to align their activities with the Service Transition plans.
- Manage stakeholder commitment and communications.

5.3.6 ESTABLISH AND MAINTAIN RELATIONSHIPS WITH STAKEHOLDERS:

Policy:

- Establish and maintain relationships with customers, customer representatives, users and suppliers throughout Service Transition in order to set their expectations about the new or changed service.

Principles:

- Set stakeholder expectations on how the performance and use of the new or changed service can be used to enable business change.
- Communicate changes to all stakeholders in order to improve their understanding and knowledge of the new or changed service.
- Provide good-quality knowledge and information so that stakeholders can find information about the Service Transition easily, e.g., release and deployment plans, and release documentation.

Best practices:

- Check with stakeholders that the new or changed service can be used in accordance with the requirements and constraints specified within the service requirements.
- Share Service Transition and release plans and any changes with stakeholders.
- Work with business relationship management and service level management to build customer and stakeholder relationships during Service Transition.

5.3.7 ESTABLISH EFFECTIVE CONTROLS AND DISCIPLINES:

Policy:

- Establish suitable controls and disciplines throughout the service lifecycle to enable the smooth transition of service changes and releases.

Principles:

- Establish and maintain the integrity of all identified service assets and configurations as they evolve through the Service Transition stage.
- Automate audit activities, where beneficial, in order to increase the detection of unauthorized changes and discrepancies in the configurations.
- Clearly define 'who is doing what, when and where at all handover points to increase accountability for delivery against the plans and processes.
- Define and communicate roles and responsibilities for handover and acceptance through the Service Transition activities (e.g., build, test, release and deployment) to reduce errors resulting from misunderstandings and lack of ownership.
- Establish transaction-based processes for configuration, change and problem management to provide an audit trail and the management information necessary to improve the controls.

Best practices:

- Ensure roles and responsibilities are well defined, maintained and understood by those involved and mapped to any relevant processes for current and foreseen circumstances.
- Assign people to each role and maintain the assignment in the service knowledge management system (SKMS) or Configuration Management system (CMS) to provide visibility of the person responsible for particular activities.
- Implement integrated incident, problem, change, Configuration Management processes with service level management to measure the quality of configuration items throughout the service lifecycle.
- Ensure that the service can be managed, operated and supported in accordance with the requirements and constraints specified within the Service Design by the service provider organization.
- Ensure that only competent staff can implement changes to controlled test environments and production services.
- Perform configuration audits and process audits to identify configuration discrepancies and nonconformance that may impact Service Transitions.

5.3.8 PROVIDE SYSTEMS FOR KNOWLEDGE TRANSFER AND DECISION SUPPORT:

Policy:

- Service Transition develops systems and processes to transfer knowledge for effective operation of the service and enable decisions to be made at the right time by competent decision makers.

Principles:

- Provide quality data, information and knowledge at the right time to the right people to reduce effort spent waiting for decisions and consequent delays.
- Ensure there is adequate training and knowledge transfer to users to reduce the number of training calls that the service desk handles.
- Improve the quality of information and data to improve user and stakeholder satisfaction while optimising the cost of production and maintenance.
- Improve the quality of documentation to reduce the number of incidents and problems caused by poor quality user documentation, release, deployment, support or operational documentation.
- Improve the quality of release and deployment documentation to reduce the number of incidents and problems caused by poor-quality

user documentation, support or operational documentation time between changes being implemented and the documentation being updated.

- Provide easy access to quality information to reduce the time spent searching and finding information, particularly during critical activities such as handling a major incident.
- Establish the definitive source of information and share information across the service lifecycle and with stakeholders in order to maximize the quality of information and reduce the overhead in maintaininginformation
- Provide consolidated information to enable change, release and deployment management to expedite effective decisions about promoting a release through the test environments and into production.

Best practices:

- Provide easy access, presentation and reporting tools for the SKMS and CMS in order.
- Provide quality user interfaces and tools to the SKMS and CMS for different people and roles to make decisions at appropriate times.
- Summarize and publish the predicted and unpredicted effects of change, deviations from actual vs predicted capability and performance together with the risk profile.
- Ensure Service Asset and Configuration Management information is accurate to trigger approval and notification transactions for decision making via workflow tools, e.g., changes, acceptance of deliverables.
- Provide knowledge, information and data for deployment, service desk, operations and support teams to resolve incidents and errors.

5.3.9 PLAN RELEASE AND DEPLOYMENT PACKAGES:

Policy:

- Release packages are planned and designed to be built, tested, delivered, distributed and deployed into the live environment in a manner that provides the agreed levels of traceability, in a cost-effective and efficient way.

Principles:

- A release policy is agreed with the business and all relevant parties.
- Releases are planned well in advance.
- Resource utilization is optimized across Service Transition activities to reduce costs.

- Resources are coordinated during release and deployment.
- Release and distribution mechanisms are planned to ensure the integrity of components during installation, handling, packaging and delivery is maintained.
- Emergency releases are managed in line with the emergency change procedure.
- The risks of backing out or remediating a failed release are assessed and managed.
- The success and failure of the releases packages is measured with the aim of improving effectiveness and efficiency while optimizing costs.

Best practices:

- All updates to releases are recorded in the Configuration Management System.
- Definitive versions of electronic media, including software, are captured in a
- Definitive Media Library prior to release into the service operations readiness test environment. Record the planned release and deployment dates and deliverables with references to related change requests and problems.
- Proven procedures for handling, distribution, delivery of release and deployment packages including verification.
- Pre-requisites and co-requisites for a release are documented and communicated to the relevant parties, e.g., technical requirements for test environment.

5.3.10 ANTICIPATE AND MANAGE COURSE CORRECTIONS:

Course corrections:

When plotting a long route for a ship or aircraft, assumptions will be made about prevailing winds, weather and other factors, and plans for the journey prepared. Checks along the way - observations based on the actual conditions experienced - will require (usually minor) alterations to ensure the destination is reached.

Policy:

- Train staff to recognize the need for course corrections and empower them to apply necessary variations within prescribed and understood limits.

Principles:

- Build stakeholder expectation that changes to plans are necessary and encouraged.

- Learn from previous course corrections to predict future ones and re-use successful approaches.
- Debrief and propagate knowledge through end-of-transition debriefing sessions and make conclusions available through the service knowledge management system.
- Manage course corrections through appropriate Change Management and baseline procedures.

Best practices:

- Use project management practices and the Change Management process to manage course corrections.
- Document and control changes but without makingthe process bureaucratic (it must be easier to do it right than to cope with the consequences of doing it wrong).
- Provide information on changes that were applied after the configuration baseline was established.
- Involve stakeholders about changes when appropriate, but manage issues and risks within Service Transition when appropriate.

5.3.11 PROACTIVELY MANAGE RESOURCES ACROSS SERVICE TRANSITIONS:

Policy:

- Provide and manage shared and specialist resources across Service Transition activities to eliminate delays.

Principles:

- Recognize the resources, skills and knowledge required to deliver Service Transition within the organization.
- Develop a team (including externally sourced resources) capable of successful implementation of the Service Transition strategy, Service Design package and release package.
- Establish dedicated resources to perform critical activities to reduce delays.
- Establish and manage shared resources to improve the effectiveness and efficiency of Service Transition.
- Automate repetitive and error-prone processes to improve the effectiveness and efficiency of key activities, e.g., distribution, build and installation.

Best practices:

- Work with human resources (HR), supplier management etc. to identify, manage and make use of competent and available resources.
- Recognize and use competent and specialist resources outside the core ITSM team to deliver Service Transition.
- Proactively manage shared resources to minimize the impact that delays in one transition have on another transition.
- Measure the impact of using dedicated vs non dedicated resources on delays, e.g., using operations staff who get diverted to fix major incidents, scheduling issues with test facilities.

5.3.12 ENSURE EARLY INVOLVEMENT IN THE SERVICE LIFECYCLE:

Policy:

- Establish suitable controls and disciplines to check at the earliest possible stage in the service lifecycle that a new or changed service will be capable of delivering the value required.

Principles:

- Use a range of techniques to maximize fault detection early in the service lifecycle in order to reduce the cost of rectification. (The later in the lifecycle that an error is detected, the higher the cost of rectification.)
- Identify changes that will not deliver the expected benefits and either change the service requirements or stop the change before resources are wasted.

Best practices:

- Involve customers or customer representatives in service acceptance test planning and test design to understand how to validate that the service will add value to the customer's business processes and services.
- Involve users in test planning and design whenever possible. Base testing on how the users actually work with a service - not just how the designers intended it to be used.
- Use previous experience to identify errors in the Service Design Build in - at the earliest possible stage – the ability to check for and to demonstrate that a new or changed service will be capable of delivering the value required of it.
- Use an independent evaluation of the Service Design and internal audits to establish whether the risks of progressing are acceptable.

5.3.13 ASSURE THE QUALITY OF THE NEW OR CHANGED SERVICE:

Policy:

- Verify and validate that the proposed changes to the operational services defined in the service and release definitions, service model and Service Design Package can deliver the required service requirements and business benefits.

Principles:

- Service Transition is responsible for assuring that the proposed changes to the operational services can be delivered according to the agreements, specifications and plans within agreed confidence levels.
- Ensure that Service Transition teams understand what the customers and business actually require from a service to improve customer and users' satisfaction.
- Quality assurance and testing practices provide a comprehensive method for assuring the quality and risks of new or changed services.
- Test environments need to reflect the live environment to the greatest degree possible in order to optimize the testing efforts.
- Test design and execution should be managed and delivered independently from the service designer and developer in order to increase the effectiveness of testing and meet any 'segregation of duty' requirements.
- Perform independent evaluations of the Service Design and the new or changed service to identify the risks that need to be managed and mitigated during build, test, deployment and use of the service - see section 4.6.
- Implement problem and Configuration Management processes across the service lifecycle in order to measure and reduce the known errors caused by implementing releases into production.

Best practices:

- Understand the business's process and priorities – this often requires an understanding of their culture, language, customs and customers.
- Comprehensive stakeholder involvement is important both for effective testing and to build stakeholder confidence, and so should be visible across the stakeholder community.
- Understand the differences between the build, test and production environments in order to manage any differences and improve the ability to predict a service's behaviour.

- Test environments are maintained under Change and Configuration Management, and their continued relevance is considered directly as part of any change.

- Establish the current service baseline and the Service Design baseline prior to evaluation of the change. Evaluate the predicted capability, quality and costs of the Service Design taking into account the results of previous experience and stakeholder feedback prior torelease and deployment.

- Consider the circumstances that will actually be inplace when Service Transition is complete, not just what was expected at the design stage.

5.3.14 PROACTIVELY IMPROVE QUALITY DURING SERVICE TRANSITION:

Policy:

- Proactively plan and improve the quality of the new or changed service during transition.

Principles:

- Detect and resolve incidents and problems during transition to reduce the likelihood of errors occurring during the operational phase and directly adversely affecting business operations.

- Proactively manage and reduce incidents, problems and errors detected during Service Transition to reduce costs, re-work and the impact on the user's business activities.

- Align the management of incidents, problems and errors during transition with the production processes in order to measure and manage the impact and cost of errors across the service lifecycle easily.

Best practices:

- Compare actual vs predicted service capability, performance and costs during pilots and early life support in order to identify any deviations and risks that can be removed prior to Service Transition closure.

- Perform an independent evaluation of the new orchanged service to identify the risk profile and prioritize the risks that need to be mitigated prior to transition closure, e.g., security risks that may impact the warranties.

- Use the risk profile from the evaluation of the Service Design to develop risk-based tests.

- Provide and test the diagnostic tools and aids with theservice desk, operations and support staff to ensure that, if something goes wrong in testing or live production use, it is relatively simple to obtain key

information that helps to diagnose the problem without impacting too much on the user.

- Encourage cross-fertilization of knowledge between transition and operation stages to improve problem diagnoses and resolution time, e.g., workarounds and fixes.
- Establish transition incident, problem, error and resolution procedures and measures that reflect those in use in the live environment.
- Fix known errors and resolve incidents in accordance with their priority for resolution.
- Document any resolution, e.g., workarounds so that the information can be analysed.
- Proactively analyse the root cause of high priority and repeat incidents.
- Record, classify and measure the number and impact of incidents and problems against each release in the test, deployment and production stages in order to identify early opportunities to fix errors.
- Compare the number and impact of incidents and problems between deployments in order to identify improvements and fix any underlying problems that will improve the user experience for subsequent deployments.
- Update incident and problem management with workarounds and fixes identified in transition.

5.4 SUMMARY

In this chapter we have covered Service Transition Fundamentals, Principles Supporting Service Transition and Policies for Service Transition like defining and implementing a formal policy for Service Transition, Implementing all changes to services through Service Transition, Adopting a common framework and standards, Maximizing re-use of established processes and systems, Aligning Service Transition plans with the business needs, Establishing and maintaining relationships with stakeholders, Establishing effective controls and disciplines, Providing systems for knowledge transfer and decision support, Plan release and deployment packages, Anticipating and manage course correction, Proactively manage resources across Service Transitions, Ensuring early involvement in the service lifecycle, Assuring the quality of the new or changed service, Proactively improve quality during Service Transition.

5.5 QUESTIONS

1. Describe Service Transition. Explain its objectives, purpose and goal.
2. Discuss the Principles of service transition stage.
3. Write short note on Warranty & Utility.
4. Write a short note on Policies.
5. Explain how to align service transition plans with the business needs?
6. Discuss how to establish & maintain relationships with stakeholders?
7. Explain how to establish effective controls and disciplines for service transition?
8. Write a short note on proactively manage resources across service transition.
9. Explain how to maximize Re-use of established processes and system policy?
10. Describe how to assure the quality of the new or modified/ changed service.

5.6 REFERENCES

- ITIL V3 Foundation Complete Certification Kit
- Foundation of IT Service Management- The Unofficial ITIL V3 Foundation Course by Brady Orand, 2nd Edition
- ITIL V3 Service Transition by OGC/TSO

6

SERVICE TRANSITION PROCESS, CHALLENGES, CRITICAL SUCCESS FACTORS & RISK

Unit Structure:

6.0 Objective

6.1 Service Transition Processes

6.2 Transition Planning and Support

6.3 Change Management

6.4 Service Asset and Configuration Management

6.5 Release and Deployment Management

6.7 Service Validation and Testing

6.7 Evaluation

6.8 Knowledge Management

6.9 Critical Success Factors

6.10 Risks

6.11 Service Transition under Difficult Conditions

6.12 Summary

6.13 Questions

6.14 References

6.0 OBJECTIVE

After studying this chapter, you will be able:

- To understand the purpose and scope of each process of service transition stage
- To explain all the processes executed at service transition stage of ITSM life cycle
- To understand and handle the challenges at services transition stage.
- To know critical success factors and risks.

6.1 SERVICE TRANSITION PROCESSES

Service Transition phase aims to build, test and deploy the service in production in cost-effective manner. There are seven key processes involved at Service Transition stage of ITIL, which are as follows:

- Transition Planning and Support
- Change Management
- Service Asset and Configuration Management
- Release and Deployment Management
- Service Validation and Testing
- Evaluation
- Knowledge Management.

6.2 TRANSITION PLANNING AND SUPPORT

Transition Planning & Support is one of the important process under the ITIL Service Transition phase. Its all about managing service transition projects. This process also referred as process of ITIL Project Management.

6.2.1 PURPOSE, GOALS, OBJECTIVES AND SCOPE:

The purpose of the Transition Planning and Support activities is to:

- Plan appropriate capacity and resources to release new/changed service into production
- Provide support for transition teams
- Ensure integrity of customer assets, service assets, and configuration throughout lifecycle
- Ensure issues, risks, deviations reported to stakeholders and decision makers
- Coordinate activities across projects, suppliers, and service teams

The goals of Transition Planning and Support are to:

- Ensure that the requirements of Service Strategy encoded in Service accordingly Plan and coordinate the resources.
- Identify, manage and control the risks of failure and disruption across transition activities.

The objective of Transition Planning and Support is to:

- Plan and coordinate the resources to establish successfully a new or changed service into production within the predicted cost, quality and time estimates.
- Ensure that all parties adopt the common framework of standard re-usable processes and supporting systems.
- Provide complete plans that enable the customer to align their activities with the Service Transition plans.

The scope of the Service Transition Planning and Support activities includes:

- Incorporating design and operation requirements into the transition plans.
- Managing and operating Transition Planning and Support activities.
- Maintaining and integrating Service Transition plans across the customer, service and contract portfolios.
- Managing Service Transition progress, changes, issues, risks and deviations.
- Quality review of all Service Transition, release and deployment plans Managing and operating the transition processes, supporting systems and tools.
- Communications with customers, users and stakeholders.
- Monitoring and improving Service Transition performance.

6.3 CHANGE MANAGEMENT

Changes happen for a variety of reasons:

- Proactively, e.g. seeking business benefits such as reducing costs or improving services or increasing the ease and effectiveness of support
- Reactively as a means of resolving errors and adapting to changing circumstances.

Changes should be managed to:

- Optimize risk exposure (supporting the risk profile required by the business)
- Minimize the severity of any impact and disruption
- Be successful at the first attempt.

To make 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. This considered approach is essential to maintain the required balance between the need for change and the impact of the change.

6.3.1 PURPOSE, GOALS, OBJECTIVESAND SCOPE:

The purpose of the Change Management process is to ensure that:

- Standardized methods and procedures used for efficient and prompt handling of changes
- All changes are recorded in Configuration Management System
- Overall business risk is optimized

The goals 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.

The objective of the Change Management process is to ensure that

- Changes are recorded and then evaluated, authorized, prioritized, planned, tested, implemented, documented and reviewed in a controlled manner.

SCOPE

The definition of a service change is:

The addition, modification or removal of authorized, planned or supported service or service component and its associated documentation.'

The scope of Change Management covers

- Changes to baselined service assets and configuration items across the whole service lifecycle.
- Each organization should define the changes that lies outside the scope of their service change process. That include:
- Changes with significantly wider impacts than service changes, e.g. departmental organization, policies and business operations – these changes would produce RFCs to generate consequential service changes
- Changes at an operational level such as repair to printers or other routine service components.

Figure 6.1 shows a typical scope for the service Change Management process for an IT department and how it interfaces with the business and suppliers at strategic, tactical and operational levels. It covers interfaces to internal and external service providers where there are shared assets and configuration items that need to be under Change Management Service Change Management must interface with business Change Management and with the supplier's Change Management. This may be an external supplier with a formal Change Management system, or with the project change mechanisms within an internal development project.

The Service Portfolio provides a clear definition of all current, planned and retired services.

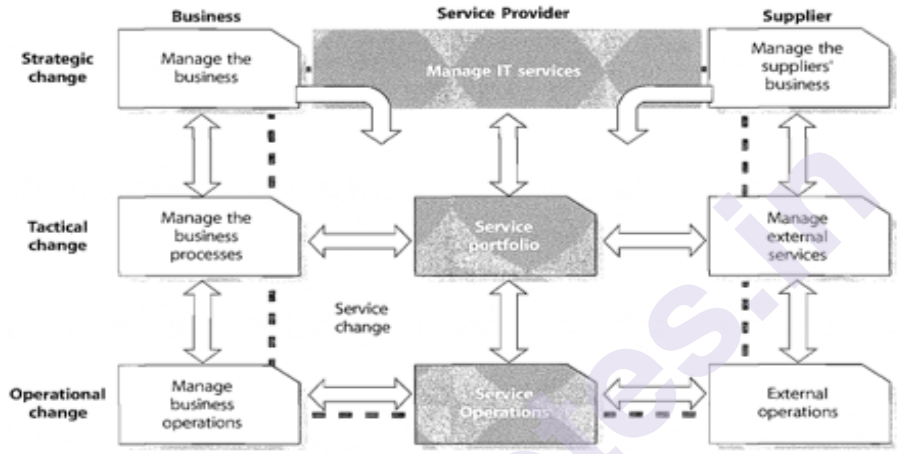

Figure 6.1 Scope of change and release management for services

6.3.2 TYPES OF CHANGE REQUEST

A change request is a formal communication seeking an alteration to one or more configuration items. For different change types there are often specific procedures. There are three different types of service change:

■ **Standard change** A pre-authorized change that is low risk, relatively common and follows a procedure or work instruction.

■ **Emergency change** A change that must be implemented as soon as possible, for example to resolve a major incident or implement a security patch.

■ **Normal change** Any service change that is not a standard change or an emergency change.

THE SEVEN R's OF CHANGE MANAGEMENT

- Who RAISED the change?
- What is the REASON for the change?
- What is the RETURN required from the change?

- What are the RISKS involved in the change?
- What RESOURCES are required to deliver the change?
- Who is RESPONSIBLE for the build, test and implementation of the change?
- What is the RELATIONSHIP between this change and other changes?

6.4 SERVICE ASSET AND CONFIGURATION MANAGEMENT (SACM)

No organization can be fully efficient or effective unless it manages its assets well, particularly those assets that are vital to the running of the customer's or organization's business. This process manages the service assets in order to support the other Service Management processes.

6.4.1 PURPOSE, GOAL AND OBJECTIVE:

The purpose of SACM is to:

- Identify, control, record, report, audit and verify service assets and configuration items, including versions, baselines, constituent components, their attributes, and relationships
- Account for, manage and protect the integrity of service assets and configuration items
- Protect the integrity of service assets and configuration items
- Ensure the integrity of the assets and configurations required to control the services and IT infrastructure by establishing and maintaining an accurate and complete Configuration Management System.

The goals of Configuration Management are to:

- Support the business and customer's control objectives and requirements
- Support efficient and effective Service Management processes by providing accurate configuration information to enable people to make decisions at the right time, e.g. to authorize change and releases, resolve incidents and problems faster.
- Minimize the number of quality and compliance issues caused by improper configuration of services and assets
- Optimize the service assets, IT configurations, capabilities and resources.

The objective is to define and control the components of services and infrastructure and maintain accurate configuration information on the historical, planned and current state of the services and infrastructure.

6.4.2 CONFIGURATION MANAGEMENT SYSTEM:

Service Asset and Configuration Management requires the use of a supporting system known as the Configuration Management System (CMS) to manage large and complex IT services and infrastructures.

The CMS holds all the information for Cls 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. For example, a Service Cl will include the details such as supplier, cost, purchase date and renewal date for licences and maintenance contracts and the related documentation such as SLAs and underpinning contracts.

The CMS maintains the relationships between all service components and any related incidents, problems, known errors, change and release documentation and may also contain corporate data about employees, suppliers, locations and business units, customers and users.

6.5 RELEASE AND DEPLOYMENT MANAGEMENT

Release and Deployment Management aims to build, test and deliver the capability to provide the services specified by Service Design and that will accomplish the stakeholders' requirements and deliver the intended objectives.

6.5.1 PURPOSE, GOAL AND OBJECTIVE:

The purpose of Release and Deployment Management is to:

- Define and agree release and deployment plans with customers and stakeholders
- Ensure that each release package consists of a set of related assets and service components that are compatible with each other
- Ensure that integrity of a release package and its constituent components is maintained throughout the transition activities and recorded accurately in the CMS
- Ensure that all release and deployment packages can be tracked, installed, tested, verified, and/or uninstalled or backed out if appropriate
- Ensure that organization and stakeholder change is managed during the release and deployment activities.
- Record and manage deviations, risks, 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

- Ensure that skills and knowledge are transferred to operations and support staff to enable them to effectively and efficiently deliver, support and maintain the service according to required warranties and service levels.

The goal of Release and Deployment Management is to deploy releases into production and establish effective use of the service in order to deliver value to the customer and be able to handover to service operations.

The objective of Release and Deployment Management is to ensure that:

- There are clear and comprehensive release and deployment plans that enable the customer and business change projects to align their activities with these plans
- A release package can be built, installed, tested and deployed efficiently to a deployment group or target environment successfully and on schedule
- A new or changed service and its enabling systems, technology and organization are capable of delivering the agreed service requirements, i.e. utilities, warranties and service levels
- There is minimal unpredicted impact on the production services, operations and support organization.
- Customers, users and Service Management staff are satisfied with the Service Transition practices and outputs, e.g. user documentation and training.

6.6 SERVICE VALIDATION AND TESTING

Service validation and testing is the process used to maintain test environments and to ensure the releases developed meet the expectations of the customer. It ensures that the new services after deployment can be supported by IT operations.

The concept to which Service Testing and Validation contributes is quality assurance.

6.6.1 PURPOSE, GOAL AND OBJECTIVES:

The purpose of the Service Validation and Testing process is to:

- Plan and implement a structured validation and testing process that demonstrates the new or changed service will support the customer's business, stakeholder requirements i.e. agreed service levels
- Provide Quality assurance for the new release (Both Service & Components)
- Identify, assess and report issues, errors and risks throughout Service Transition stage.

The goal of Service Validation and Testing is to assure that a service will provide value to customers and their business.

The objectives of Service Validation and Testing are to:

- Provide confidence that a release will create a new or changed service or service offerings that deliver the expected outcomes and value for the customers within the projected costs, capacity and constraints.
- Validate that a service is 'fit for purpose' - it will deliver the required performance with desired constraints removed
- Assure a service is 'fit for use' - it meets certain specifications under the specified terms and conditions of use
- 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 production.

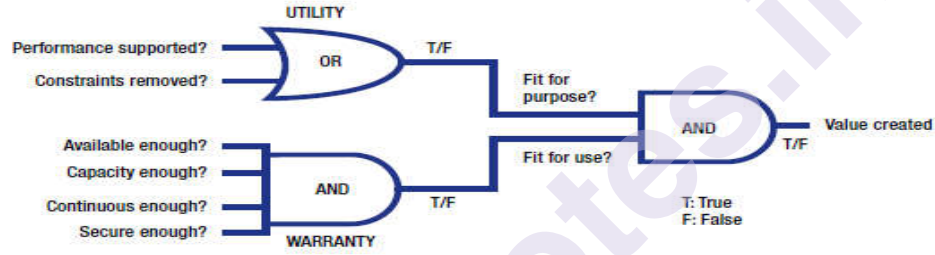

Figure 6.2 Value Creation from service utilities & warranties

6.7 EVALUATION

Evaluation is a generic process that considers whether the performance of something is acceptable, value for money etc. - and whether it will be proceeded with, accepted into use, paid for, etc.

6.7.1 PURPOSE, GOAL AND OBJECTIVE:

The purpose of evaluation is to provide a consistent and standardized means of determining the performance of a service change in the context of existing and proposed services and IT infrastructure. The actual performance of a change is assessed against its predicted performance and any deviations between the two are understood and managed.

The goal of evaluation is to set stakeholder expectations correctly and provide effective and accurate information to Change Management to make sure changes that adversely affect service capability and introduce risk are not transitioned unchecked.

The objective is to:

- Evaluate the intended effects of a service change and as much of the unintended effects as is reasonably practical given capacity, resource and organizational constraints
- Provide good quality outputs from the evaluation process so that Change Management can expedite an effective decision about whether a service change is to be approved or not.

6.8 KNOWLEDGE MANAGEMENT

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 they are, or may find themselves, in. 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.

6.8.1 PURPOSE, GOAL AND OBJECTIVE:

The purpose of Knowledge Management is to ensure that the right information is delivered to the appropriate place or competent person at the right time to enable informed decision.

The goal of Knowledge Management is to enable organizations to improve the quality of management decision making by ensuring that reliable and secure information and data is available throughout the service lifecycle.

The objectives of Knowledge Management include:

- Enabling the service provider to be more efficient and improve quality of service, increase satisfaction and reduce the cost of service
- Ensuring 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 Ensuring that, at a given time and location, service provider staff have adequate information on:

  -Who is currently using their services?

  -The current states of consumption

  -Service delivery constraints

  -Difficulties faced by the customer in fully realizing the benefits expected from the service.

Knowledge Management is typically displayed within the Data-to-Information-to-Knowledge-to-Wisdom (DIKW) structure. The use of these terms is set out below.

Data is a set of discrete facts about events. Most organizations capture significant amounts of data in highly structured databases such as Service Management and Configuration Management tools/systems and databases. The key Knowledge Management activities around data are the ability to:

Capture accurate data Analyse, synthesize, and then transform the data into information

Identify relevant data and concentrate resources on its capture.

Information comes from providing context to data. Information is typically stored in semi-structured content such as documents, e-mail, and multimedia.

The key knowledge Management activity around information is managing the content in a way that makes it easy to capture, query, find, re-use and learn from experiences so that mistakes are not repeated and work is not duplicated.

Knowledge is composed of the tacit experiences, ideas, insights, values and judgements of individuals. People gain knowledge both from their own and from their peers' expertise, as well as from the analysis of information (and data). Through the synthesis of these elements, new knowledge is created.

Knowledge is dynamic and context based. Knowledge puts information into an 'ease of use' form, which can facilitate decision making. In Service Transition this knowledge is not solely based on the transition in progress, but is gathered from experience of previous transitions, awareness of recent and anticipated changes and other areas that experienced staff will have been unconsciously collecting for some time.

Wisdom gives the ultimate discernment of the material and having the application and contextual awareness to provide a strong common-sense judgement.

6.8.2 THE SERVICE KNOWLEDGE MANAGEMENT SYSTEM:

Specifically, within IT Service Management, Knowledge Management will be focused within the Service Knowledge Management System (SKMS) concerned, as its name implies, with knowledge. Underpinning this knowledge will be a considerable quantity of data, which will be held in a central logical repository or Configuration Management System (CMS) and Configuration Management Database (CMDB). However, clearly the SKMS is a broader concept that covers a much wider base of knowledge, for example:

- The experience of staff
- Records of peripheral matters, e.g. weather, user numbers and behaviour, organization's performance figures
- Suppliers' and partners' requirements, abilities and expectations
- Typical and anticipated user skill levels.

Challenges, Critical Success Factors and Risks:

The complexity of services across the supply chain is increasing and this leads to challenges for any service provider that implements new services or changes existing services. IT within e-business not only supports the primary business processes, but is part of the primary business processes.

This prime position brings a wide range of challenges to successful Service Transition, such as:

- Enabling almost every business process and service in IT, resulting in a large customer and stakeholder group that is involved and impacted by Service Transition
- Managing many contacts, interfaces and relationships through Service Transition, including a variety of different customers, users, programmes, projects, suppliers and partners
- There being little harmonization and integration of the processes and disciplines that impact Service Transition, e.g. finance, engineering, human resource management
- There being inherent differences among the legacy systems, new technology and human elements that result in unknown dependencies and are risky to change
- Achieving a balance between maintaining a stable production environment and being responsive to the business needs for changing the services
- Achieving a balance between pragmatism and bureaucracy
- Creating an environment that fosters standardization, simplification and knowledge sharing Being an enabler of business change and, therefore, an integral component of the business change programmes
- Establishing leaders to champion the changes and improvements Establishing 'who is doing what, when and where and 'who should be doing what, when and where'
- Developing a culture that encourages people to collaborate and work effectively together and an atmosphere that fosters the cultural shifts necessary to get buy-in from people

- Developing standard performance measures and measurement methods across projects and suppliers
- Ensuring that the quality of delivery and support matches the business use of new technology Ensuring that the Service Transition time and budget is not impacted by events earlier in the service lifecycle (e.g. budget cuts)
- Understanding the different stakeholder perspectives that underpin effective risk management within an organization
- Understanding, and being able to assess, the balance between managing risk and taking risks as it affects the overall strategy of the organization and potential mismatch between project risks and business risk
- Evaluating the effectiveness of reporting in relation to risk management and corporate governance.

6.9 CRITICAL SUCCESS FACTORS

Service provision, in all organizations, needs to be matched to current and rapidly changing business demands. The objective is to improve continually the quality of service, aligned to the business requirements, cost-effectively. To meet this objective, the following critical success factors need to be considered for Service Transition:

- Understanding and managing the different stakeholder
- perspectives that underpin effective risk management within an organization and establishing and maintaining stakeholder 'buy-in' and commitment
- Maintaining the contacts and managing all the relationships during Service Transition Integrating with the other service lifecycle stages, processes and disciplines that impact Service Transition
- Understanding the inherent dependencies among the legacy systems, new technology and human elements that result in unknown dependencies and are risky to change
- Automating processes to eliminate errors and reduce the cycle time
- Creating and maintaining new and updated knowledge in a form that people can find and use Developing good-quality systems, tools, processes and procedures required to manage a Service Transition practice Good Service Management and IT infrastructure tools and technology
- Being able to appreciate and exploit the cultural and political environment

- Being able to understand the service and technical configurations and their dependencies Developing a thorough grasp of the hard factors (processes and procedures) and soft (skills and competencies) factors required to manage a Service Transition practice
- Developing a workforce with the right knowledge and skills, appropriate training and the right service culture
- Defining clear accountabilities, roles and responsibilities
- Establishing a culture that enables knowledge to be shared freely and willingly
- Demonstrating improved cycle time to deliver change and less variation in time, cost and quality predictions during and after transition
- Demonstrating improved customer and user satisfaction ratings during Service Transition Demonstrating that the benefits of establishing and improving the Service Transition practice and processes outweigh the costs (across the organization and services)
- Being able to communicate the organization's attitude to risk and approach to risk management more effectively during Service Transition activities
- Building a thorough understanding of risks that have
- Impacted or may impact successful Service Transition of services in the Service Portfolio.

6.10 RISKS

Implementing the Service Transition practice should not be made without recognizing the potential risk to services currently in transition and those releases that are planned. A baseline assessment of current Service Transitions and planned projects will help Service Transition to identify implementation risks.

These risks might include:

- Change in accountabilities, responsibilities and practices of existing projects that de-motivate the workforce
- Alienation of some key support and operations staff
- Additional unplanned costs to services in transition
- Resistance to change and circumvention of the processes due to perceived bureaucracy.

Other implementation risks include:

- Excessive costs to the business due to overly riskaverse Service Transition practices and plans Knowledge sharing (as the wrong people may have access to information)

- Lack of maturity and integration of systems and tools resulting in people 'blaming' technology for other shortcomings
- Poor integration between the processes – causing process isolation and a silo approach to delivering ITSM
- Loss of productive hours, higher costs, loss of revenue or perhaps even business failure as a result of poor Service Transition processes.

6.11 SERVICE TRANSITION UNDER DIFFICULT CONDITIONS

In some circumstances, Service Transitions will be required under atypical or difficult conditions, such as:

- Short timescale
- Restricted finances
- Restricted resource availability - not enough people or lack of test environments, inadequate tools etc.
- Absence of anticipated skills sets Internal political difficulty, staff disincentives, such as:

  -Redundancy/outsourcing or similar threats

  -Difficult corporate culture of confrontational management style

  -Internal rivalries and competitiveness
- External difficulties such as weather, political instability, post-disaster, legislation.

Clearly, some of these circumstances overlap with continuity planning, and many of the approaches set out in the Service Design publication will be relevant to successful transition in difficult circumstances.

If the difficulties are anticipated, then alleviating measures will be identified and form part of the service package, planning the route through transition within the transition model, as would any foreseen factors likely to influence transition.

It is quite possible, however, that the difficulties will be unanticipated, perhaps due to changed circumstances, and will require 'on the fly' adaptation. This section sets out some of the constraining circumstances that might require adaptation, modification or compromise, and elements of approach that would aid success. A key element common to most (if not all) of these situations is having a clear understanding of what will constitute success. When circumstances are difficult priorities are often focused on specific aspects of service, customer base etc. – then to deliver accepted priorities in the constrained circumstances will often require compromises in other areas.

6.11.1 WHEN SPEED IS MORE IMPORTANT THAN ACCURACY OR SMOOTHNESS:

In time critical situations, implementation of a new or changed service may be more important than a degree of disruption. This is effectively a risk management decision, and general risk management principles apply. Some of the key factors that assist with delivering success in this context are:

- Empowerment - with staff given the authority to take appropriate levels of risk. In volatile industries Service Transition must act in a way that reflects the corporate risk culture and not suppress or undermine business risk decisions.
- A need to know the absolute cut off date/time that Service Transition must deliver by - too often either 'safety margins' are built in meaning a product is delivered early that could have been improved, or people assume there is some leeway and there isn't - meaning critical deadlines are missed. It is often better to be totally open and trust key staff.
- Deciding which components of the transitioned service must be available at the cut-off date, and which could be added later.
- How separable are the components and what are the dependencies? What elements might be required although not initially on the 'essentials' list?
- Which users/customers/locations etc. must be in place at the cut-off date?
- What actually happens if you fail? Again, honesty is often the best policy here. Consider:

  -Business impact

  -Money

  -Lives

  -Political embarrassment

  -Reputation.

Understanding crisis management can be very helpful in coping and especially understanding that the rules for crisis management are different from those for everyday management. Just being aware of the first two laws of crisis management (after Larry Niven) can help to reassure people that the situation is survivable:

Rule 1: Don't panic.

Rule 2: A good crisis manager makes decisions instantly and acts on them. If they later turn out to have been correct, so much the better, but speed is often more important than efficiency in a crisis situation.

Success in these circumstances depends on:

- Empowerment and subsequent support, and a belief in that support. Staff must be aware of their empowerment levels and actually believe

that the organization will support their choices – not be in fear of a 'court martial approach.

- Authorization channels and those channels being open and rapid. There must be agreed actions if the channels don't function - e.g. increased delegated authority, escalation, alternative support channels.
- Following the procedures, realizing there is risk, and no blame afterwards – if not the required flexibility and speed of response is constrained.

6.11.2 RESTRICTED RESOURCES:

When resources are in short supply, a key aspect here is deciding what to measure and sticking to that decision and the framework for delivery, e.g.:

- What is the important parameter – speed, or low cost or whatever? And knowing that will be the measure of importance afterwards, e.g. no blame for it being expensive when the understanding was 'get it in by 3 p.m. whatever the cost'.
- Establish an applicable hierarchy of measures - speed - money - full functionality etc. with some subordinate ones having absolute limits, e.g. as quickly as possible, but not more that £12,500; or as cheaply as possible but must be in by 30 September. This requires involving budget holders, business decision makers etc. to ensure the correct parameters are built in.
- Awareness and documentation. All actually and potentially aware staff need to be aware of requirements, and a mechanism for keeping staff informed quickly about changes to those requirements is essential.

6.11.3 SAFETY CRITICAL SERVICES AND HIGH-RISK ENVIRONMENTS:

Ever-increasingly, IT services directly support or actually deliver services on which lives depend, such as hospital services, emergency services call-taking, flood control and aircraft 'fly-by-wire'. Extra security and fool proof approaches are required, with features such as:

- Appropriate documentation, which is essential and often includes counter-signatures and extra checks on stage approval; however, excessive documentation can be counter-productive; high risk can often be found in conjunction with time-restricted situations (e.g. emergency services coordination, meaning careful balancing of safety and speed is required; in such circumstances skill and experience and/or extensive training is a major factor
- Accuracy typically taking priority over speed
- More rigorous testing, longer time periods and more detailed data collected and maintained within the CMS
- Measures of safety accurately assessed by an accepted authority, e.g. what constitutes acceptable levels, such as safe radiation doses within X-ray or radioactive environments

- Setting the sign-off authority, and ensuring those responsible are not overly influenced by inappropriate pressures, such as concern about company profit or staff bonuses as opposed to risking human lives
- In extreme circumstances ensuring more than one individual must be involved for certain actions to be taken (e.g. typically the procedures for launching nuclear weapons require simultaneous confirmation by two trained officers)
- Consider 'veto' rights for sub-groupings whereby those controlling any key component of the service can stop implementation – as a 'no-go' from one of a dozen teams can stop a launch of a the space shuttle.

6.11.4 WORKING WITH DIFFICULT CUSTOMERS:

Of course, there is no such thing as a bad customer, really, but often there are customers who are unclear of their role as a customer and so act in a way that prevents rather than supports successful implementation. Examples include customers who:

- Feel the need to get too involved in the detail of how things are done, instead of judging by the service delivered
- Are not able to deliver the decisions and choose options to suit their business needs
- Do not make staff and resources available to facilitate
- Effective Service Transition, for example providing data and staff to assess the transitioned service, or to effect user testing.

These kinds of situation can often be improved by awareness and education of:

- Customers
- Users
- Transition staff (e.g. patience and diplomacy skills)
- Account management working with the customers to reassure customers and ascertain their requirements
- Careful budgetary control, so that customers can see the value returning for their investment of staff time and other resources.

6.12 SUMMARY

In this chapters we have covered Service Transition Processes like Transition Planning and Support, Change Management, Service Asset and Configuration Management, Release and Deployment Management, Service Validation and Testing, Evaluation, Knowledge Management, **Challenges of Service Transition**:-i) Complexity to change IT service i.e. transitioning service into service operations phases, ii) Many contacts and relationalship with stakeholders, users, customers, project teams members, management peoples, suppliers, etc. iii) Achieving balance between maintaining a stable live environment and responsive to the business needs, iv) After change , proper integration between components

have to be maintained, v) Developing leaders to champions and doing continual improvement, vi) Finding out 'who is doing what, when, where' and who should be doing, when and where?, vii) Developing a culture that will encourage people to work together and to the change effectively in a reliable and secure manner., viii) Achieve balance between managing risks and taking risks, ix) Time required for service transition should not affect other ITSM cycle phases, x) Develop standard measures, peformances measures and measurement tools across project and suppliers. **Critical Success Factors: -** i) Creating and maintaining new and updated knowledge so that people can use and understand it. ii) Managing services in terms of high quality i.e. providing utility and warranty to business. iii) Tools and technology required for building IT infrastructure for developing good services. iv) Having clear defined relationalship and interfaces with programme and project management. v) Developing a culture that enables knowledge too be shared freely and willingly. vi) Understand the legacy system, suppliers, human elements and risks involved to do service transition. vii) Understand technical configurations and their dependencies. viii) Integrating service transition with other ITSM life cycle phases and disciplines that impact it. ix) Demonstrate improved custoer and user satisfaction rating for service transition. x) Being able to communicate with others stakeholders, users, customers, project teams members, management peoples, suppliers, etc. xi) Demonstrating the benefits of doing service transition practices and processes that will lead to increase our budgets. xii) Understand yours stakeholders, customers and their requirements and even their perspectives for successful service transition. **Risks involved in Service Transition:-** i) Unplanned costs will involve in service transition. ii) Isolation of some key support and operations staff. iii) Change in accountabilities, responsibilities and practices of existing projects that de-movites the workforce. iv) Various types of risks factors will be involved such as short time scale, restricted finances, restricted resources, absence of anticipated skills, internal politics, communications problems etc. v) Lack of Spport from management. vi) Lack of Commitment and **Service Transition under Difficult Conditions.**

6.13 QUESTIONS

1) Explain Transition planning and support process in detail

2) What is the purpose, goal and objectives of transition planning and support process?

3) Explain in detail service asset configuration management process.

4) Describe the purpose, goal and objectives of change management.

5) What is Change? What are the different types of Changes?

6) Specify the objectives and scope of release and deployment management process.

7) List and explain Seven R (7 R's) of ITIL Change management

8) Explain the scope of Asset Configuration Management Process.

9) Explain objectives and goals of Service Asset Configuration Management Process.

10) What is the purpose of Release and deployment Management Process?

11) State and Explain purpose, objective and Goal of Service Validation and Testing

12) Explain in detail Service Validation and testing process.

13) Write a short note on Knowledge Management.

14) List all the challenges of service transition stage

15) Write a detail note on critical success factor of service transition phase.

16) What are the measures to be taken in service transition phase when speed is more important than accuracy or smoothness?

17) Explain in detail about the risks associated with service transition phase.

18) Describe the terms Knowledge, Information and wisdom.

6.14 REFERENCES

- ITIL V3 Foundation Complete Certification Kit
- Foundation of IT Service Management- The Unofficial ITIL V3 Foundation Course by Brady Orand, 2nd Edition
- ITIL V3 Service Transition by OGC/TSO

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7

SERVICE OPERATIONS AND SERVICE OPERATION PRINCIPLES

Unit Structure:

7.0 Objective

7.1 Service Operations Fundamentals

7.1.1 Purpose/goal/objective

7.1.2 Scope

7.1.3 Value to business

7.1.4 Optimizing Service Operation performance

7.2 Service Operation Principles

7.2.1 Functions, Group, Teams, Departments and Divisions

7.2.2 Achieving Balance in Service Operations

7.2.2.1 Internal IT view versus external business view

7.2.2.2 Stability versus responsiveness

7.2.2.3 Quality of service versus cost of service

7.2.2.4 Reactive versus proactive

7.2.3 Providing Service

7.2.4 Operation Staff involvement in Service Design and Service Transition

7.2.5 Operational Health

7.2.6 Communication

7.2.6.1 Meetings

7.2.6.1.1 The Operations meeting

7.2.6.1.2 Department, group or team meetings

7.2.6.1.3 Customer meetings

7.2.7 Documentation

7.3 Summary

7.4 Questions

7.5 References

7.0 OBJECTIVE

After studying this chapter, you will be able:

- To Understand the basic fundamentals of service operation stage
- To explain the principles of service operation
- To explain the importance of communication and different modes of communication followed by different organization
- Explain the different types of meetings conducted in the organizations

7.1 SERVICE OPERATION FUNDAMENTALS

- Service operation manage the day to day IT activities/ operations – i.e. things you do everyday to deliver a service to provide value to customer through communication and support.
- Service operation ensures that services are being provided efficiently and effectively as per SLAs. (Service Level Agreement). It includes monitoring services, resolving incidents, fulfilling requests and carrying out operational tasks.

7.1.1 PURPOSE/GOAL/OBJECTIVE :

The purpose of Service Operation is to coordinate and carry out the activities and processes required to deliver and manage services at agreed levels to business users and customers. Service Operation is also responsible for the ongoing management of the technology that is used to deliver and support services. Well-designed and well-implemented processes will be of little value if the day-to-day operation of those processes is not properly conducted, controlled and managed. Nor will service improvements be possible if day-to-day activities to monitor performance, assess metrics and gather data are not systematically conducted during Service Operation.

7.1.2 SCOPE :

Service 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 :** Operational aspects of all processes whatever part of the lifecycle they originate from (e.g. operational aspects of capacity and availability 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 concerned with the management of the infrastructure used to deliver services.

- **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.

7.1.3 VALUE TO BUSINESS :

Each stage in the ITIL Service Lifecycle provides value to business. For example, service value is modelled in Service Strategy; the cost of the service is designed, predicted and validated in Service Design and Service Transition; and measures for optimization are identified in Continual Service Improvement. The operation of service is where these plans, designs and optimizations are executed and measured. From a customer viewpoint, Service Operation is where actual value is seen.

7.1.4 OPTIMIZING SERVICE OPERATION PERFORMANCE

Service Operation is optimized in two ways:

- **Long-term incremental improvement :** This is based on evaluating the performance and output of all Service Operation processes, functions and outputs over time. The reports are analyzed and a decision made about whether improvement is needed and, if so, how best to implement it through Service Design and Transition. Examples include the deployment of a new set of tools, changes to process designs, reconfiguration of the infrastructure, etc. This type of improvement is covered in detail in the Continual Service Improvement publication.

- **Short-term ongoing improvement** of working practices within the Service Operation processes, functions and technology itself. These are generally smaller improvements that are implemented without any change to the fundamental nature of a process or technology. Examples include tuning, workload balancing, personnel redeployment and training, etc. Although both of these are discussed in some detail within the scope of Service Operation, the Continual Service Improvement publication will provide a framework and alternatives within which improvement may be driven as part of the overall support of business objectives.

7.2 SERVICE OPERATION PRINCIPLES

The principles are aimed at helping Service Operation practitioners to achieve a balance between all the roles and to focus on effectively managing the day-to-day aspects while maintaining a perspective of the greater context.

7.2.1 FUNCTIONS, GROUPS, TEAMS, DEPARTMENTS AND DIVISIONS:

The Service Operation uses several terms to refer to the way in which people are organized to execute processes or activities. There are several definitions for each term

- **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.

- **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 dayto-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.

7.2.2 ACHIEVING BALANCE IN SERVICE OPERATION:

Service Operation is more than just the repetitive execution of a standard set of procedures or activities. All functions, processes and activities are designed to deliver a specified and agreed level of services, but they have to be delivered in an ever-changing environment. This forms a conflict between maintaining the status quo and adapting to changes in the business and technological environments. One of Service Operation's key roles is therefore to deal with this conflict and to achieve a balance between conflicting sets of priorities. It also provides some high-level guidelines on how to resolve the conflict and thus move towards a best-practice approach. Every conflict therefore represents an opportunity for growth and improvement.

7.2.2.1 INTERNAL IT VIEW VERSUS EXTERNAL BUSINESS VIEW :

The most fundamental conflict in all phases of the ITSM Lifecycle is between the view of IT as a set of IT services (the external business view) and the view of IT as a set of technology components(internal IT view).

- The **external view** of IT is the way in which services are experienced by its users and customers. They do not always understand, nor do they care about, the details of what technology is used to manage those services. All they are concerned about is that the services are delivered as required and agreed.

- The **internal view** of IT is the way in which IT components and systems are managed to deliver the services. Since IT systems are complex and diverse, this often means that the technology is managed by several different teams or departments – each of which is focused on achieving good performance and availability of 'its' systems. Both views are necessary when delivering services. The organization that focuses only on business requirements without thinking about how they are going to deliver will end up making promises that cannot be kept. The organization that focuses only on internal systems without thinking about what services they support will end up with expensive services that deliver little value. The potential for role conflict between the external and internal views is the result of many variables, including the maturity of the organization, its management culture, its history, etc. This makes a balance difficult to achieve, and most organizations tend more towards one role than the other. Of course, no organization will be totally internally or externally focused, but will find itself in a position along a spectrum between the two.

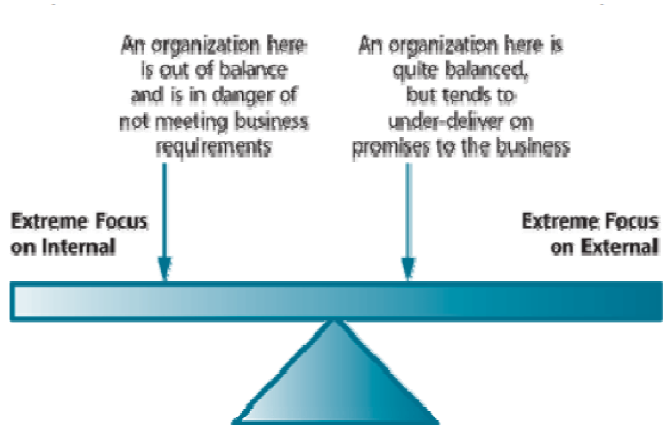

Figure 7.1 Achieving a balance between external and internal force

Building Service Operation with a balance between internal and external focus requires a long-term, dedicated approach reflected in all phases of the ITSM Service Lifecycle. This will require the following:

- An understanding of what services are used by the business and why.
- Anunderstanding of the relative importance and impact of those services on the business.
- An understanding of how technology is used to provide IT services.
- Involvement of Service Operation in Continual Service Improvement projects that aim to identify ways of delivering more, increase service quality and lower cost.
- Procedures and manuals that outline the role of IT Operations in both the management of technology and the delivery of IT services.
- A clearly differentiated set of metrics to report to the business on the achievement of service objectives; and to report to IT managers on the efficiency and effectiveness of Service Operation.
- All IT Operations staff understand exactly how the performance of the technology affects the delivery of IT services and in turn how these affect the business and the business goals.
- A set of standard services delivered consistently to all Business Units and a set of non-standard (sometimes customized) services delivered to specific Business Units – together with a set of Standard Operating Procedures (SOPs) that can meet both sets of requirements.
- A cost strategy aimed at balancing the requirements of different business units with the cost savings available through optimization of existing technology or investment in new technology – and an understanding of the cost strategy by all involved IT resources.
- A value-based, rather than cost-based, Return on Investment strategy.

- Involvement of IT Operations staff in the Service Design and ServiceTransition phases of the ITSM Lifecycle.
- Input from and feedback to Continual Service Improvement to identify areas where there is an imbalance and the means to identify and enforce improvement.
- A clear communication and training plan for business. While many organizations are good at developing Communication Plans for projects, this often does not extend into their operational phase.

7.2.2.2 STABILITY VERSUS RESPONSIVENESS :

Service Operation needs to ensure that the IT Infrastructure is stable and available as designed. At the same time, Service Operation needs to recognize that business and IT requirements change. Some of these changes are evolutionary.

In evolutionary changes, it is possible to plan how to respond to the change and thus maintain stability while responding to the changes.

Many changes, though, happen very quickly and sometimes under extreme pressure. For example, a Business Unit unexpectedly wins a contract that requires additional IT services, more capacity and faster response times. The ability to respond to this type of change without impacting other services is a significant challenge. Many IT organizations are unable to achieve this balance and tend to focus on either the stability of the IT Infrastructure or the ability to respond to changes quickly.

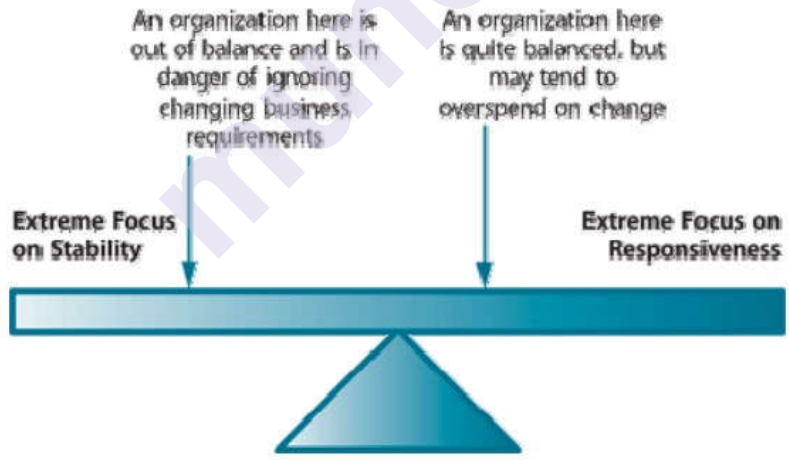

Figure 7.2 Achieving a balance between focus on stability and responsiveness

Building an IT organization that achieves a balance between stability and responsiveness in Service Operation will require the following actions:

- Ensure investment in technologies and processes that are adaptive rather than rigid, e.g. virtual server and application technology and the use of Change Models

- Build a strong Service Level Management (SLM) process which is active from the Service Design phase to the Continual Service Improvement phase of the ITSM Lifecycle.
- Foster integration between SLM and the other Service Design processes to ensure proper mapping of business requirements to IT operational activities and components of the IT Infrastructure. This makes it easier to model the effect of changes and improvements.
- Initiate changes at the earliest appropriate stage in the ITSM
- Lifecycle. This will ensure that both functional (business) and manageability (IT operational) requirements can be assessed and built or changed together.
- Ensure IT involvement in business changes as early as possible in the change process to ensure scalability, consistency and achievability of IT services sustaining business changes.
- Service Operation teams should provide input into the ongoing design and refinement of the architectures and IT services (see Service Design and Service Strategy publications).
- Implement and use SLM to avoid situations where business and IT managers and staff negotiate informal agreements.

7.2.2.3 QUALITY OF SERVICE VERSUS COST OF SERVICE :

Service Operation is required consistently to deliver the agreed level of IT service to its customers and users, while at the same time keeping costs and resource utilization at an optimal level. Figure 7.3 represents the investment made to deliver a service at increasing levels of quality.

Figure 7.3 Balancing Service Quality and Cost

In Figure 7.3, an increase in the level of quality usually results in an increase in the cost of that service, and vice versa. However, the relationship is not always directly proportional:

- Early in the service's lifecycle it is possible to achieve significant increases in service quality with a relatively small amount of money. For example, improving service availability from 55% to 75% is fairly straightforward and may not require a huge investment.

- Later in the service's lifecycle, even small improvements in quality are very expensive. For example, improving the same service's availability from 96% to 99.9% may require large investments in high-availability technology and support staff and tools.

Achieving an optimal balance between cost and quality (shown between the dotted lines in **Figure 7.3**) is a key role of Service Management. There is no industry standard for what this range should be, since each service will have a different range of optimization, depending on the nature of the service and the type of business objective being met.

Determining the appropriate balance of cost and quality should be done during the Service Strategy and Service Design Lifecycle phases, although in many organizations it is left to the Service Operation teams – many of whom do not generally have all the facts or authority to be able to make this type of decision.

Service Level Requirements – with a clear understanding of the business purpose of the service and the potential risks – will help to ensure that the service is delivered at the appropriate cost. They will also help to avoid 'over-sizing' of the service just because the budget is available, or 'under-sizing' because the business does not understand the manageability requirements of the solution. Either result will cause customer dissatisfaction and even more expense when the solution is re-engineered or retro-fitted to the requirements that should have been specified during Service Design.

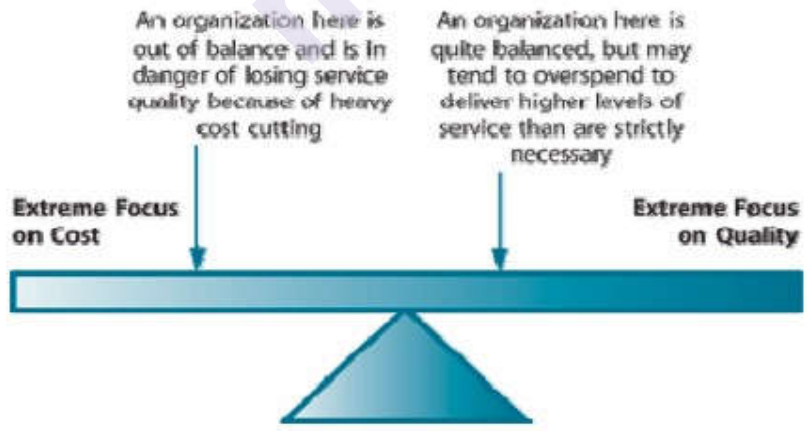

Figure7.4 Achieving a balance between focus on cost and quality

Achieving a balance will ensure delivery of the level of service necessary to meet business requirements at an optimal (as opposed to lowest possible) cost. This will require the following:

- A Financial Management process and tools that can account for the cost of providing IT services; and which model alternative methods of delivering services at differing levels of cost.
- Ensuring that decisions around cost versus quality are made by the appropriate managers during Service Strategy and Service Design. IT operational managers are generally not equipped to evaluate business opportunities and should only be asked to make financial decisions that are related to achieving operational efficiencies.

7.2.2.4 REACTIVE VERSUS PROACTIVE

A reactive organization is one which does not act unless it is prompted to do so by an external driver, e.g. a new business requirement, an application that has been developed or escalation in complaints made by users and customers. An unfortunate reality in many organizations is the focus on reactive management mistakenly as the sole means to ensure services that are highly consistent and stable, actively discouraging proactive behaviour from operational staff. The unfortunate irony of this approach is that discouraging effort investment in proactive Service Management can ultimately increase the effort and cost of reactive activities and further risk stability and consistency in services.

A proactive organization is always looking for ways to improve the current situation. It will continually scan the internal and external environments, looking for signs of potentially impacting changes. Proactive behaviour is usually seen as positive, especially since it enables the organization to maintain competitive advantage in a changing environment. However, being too proactive can be expensive and can result in staff being distracted. The need for proper balance in reactive and proactive behaviour often achieves the optimal result.

From a maturity perspective, it is clear that newer organizations will have different priorities and experiences from a more established organization – what is best practice for a mature organization may not suit a younger organization. Therefore, an imbalance could result from an organization being either less or more mature.

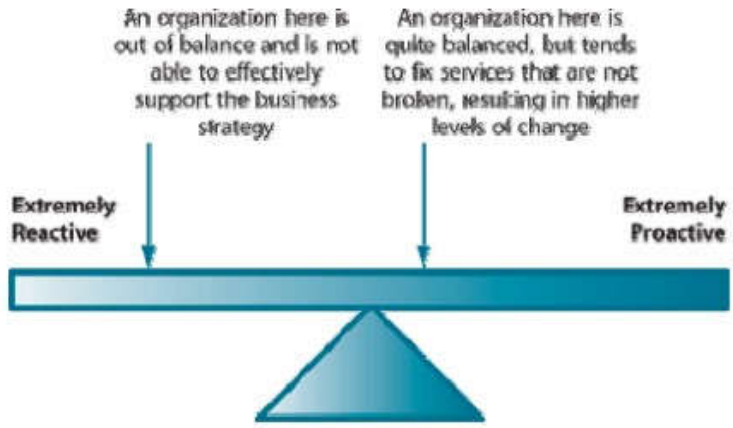

Figure 7.5 Achieving a balance between being too reactive or too proactive

While proactive behaviour in Service Operation is generally good, there are also times where reactive behaviour is needed. The role of Service Operation is therefore to achieve a balance between being reactive and proactive. This will require:

- Formal Problem Management and Incident Management processes, integrated between Service Operation and Continual Service Improvement.
- The ability to prioritize technical faults as well as business demands. This needs to be done during Service Operation, but the mechanisms need to be put in place during Service Strategy and Design stages. These mechanisms could include incident categorization systems, escalation procedures and tools to facilitate impact assessment for changes.
- Data from Configuration and Asset Management to provide data where required, saving projects time and making decisions more accurate.
- Ongoing involvement of SLM in Service Operation.

7.2.3 PROVIDING SERVICE:

All Service Operation staff must be fully aware that they are there to 'provide service' to the business. They must provide a timely (rapid response and speedy delivery of requirements), professional and courteous service to allow the business to conduct its own activities – so that the commercial customer's needs are met and the business thrives.

It is important that staff are trained not only in how to deliver and support IT services, but also in the manner in which that service should be provided.

A critical element of being a proficient service provider is placing as much emphasis on recruiting and training staff to develop competency in dealing with and managing customer relationships and interactions as they do on technical competencies for managing the IT environment.

7.2.4 OPERATION STAFF INVOLVEMENT IN SERVICE DESIGN AND SERVICE TRANSITION:

Service Operation staff are involved in Service Design and Service Transition and potentially also in-Service Strategy where appropriate.

One key to achieving balance in Service Operation is an effective set of Service Design processes. These will provide IT Operations Management with:

- Clear definition of IT service objectives and performance criteria
- Linkage of IT service specifications to the performance of the ITInfrastructure
- Definition of operational performance requirements
- A mapping of services and technology
- The ability to model the effect of changes in technology and changes to business requirements
- Appropriate cost models (e.g. customer or service based) to evaluate Return on Investment and cost-reduction strategies.

Service Design is a phase in the Service Management Lifecycle using a set of processes, not a function independent of Service Operation. As such, many of the people who are involved in Service Design will come from IT Operations Management.

This should not only be encouraged, but Service Operation staff should be measured on their involvement in Service Design activities – and such activities should be included in job descriptions and roles, etc. This will help to ensure continuity between business requirements and technology design and operation and it will also help to ensure that what is designed can also be operated.

IT Operations Management staff should also be involved during Service Transition to ensure consistency and to ensure that both stated business and manageability requirements are met.

Resources must be made available for these activities and the time required should be taken into account, as appropriate.

7.2.5 OPERATIONAL HEALTH

The IT Infrastructure is like an organism that has vital life signs that can be monitored to check whether it is functioning normally. This means that it is not necessary to monitor continuously every component of every IT system to ensure that it is functioning.

Operational Health can be determined by isolating a few important 'vital signs' on devices or services that are defined as critical for the successful execution of a Vital Business Function. This could be the bandwidth utilization on a network segment, or memory utilization on a major server. If these signs are within normal ranges, the system is healthy and does not require additional attention. This reduction in the need for extensive

monitoring will result in cost reduction and operational teams and departments that are focused on the appropriate areas for service success.

However, as with organisms, it is important to check systems more thoroughly from time to time, to check for problems that do not immediately affect vital signs. For example, a disk may be functioning perfectly, but it could be nearing its Mean Time Between Failures (MTBF) threshold. In this case the system should be taken out of service and given a thorough examination or 'health check'. At the same time, it should be stressed that the end result should be the healthy functioning of the service as a whole. This means that health checks on components should be balanced against checks of the 'end-to-end' service.

Operational Health is dependent on the ability to prevent incidents and problems by investing in reliable and maintainable infrastructure. This is achieved through good availability design and proactive Problem Management. At the same time, Operational Health is also dependent on the ability to identify faults and localize them effectively so that they have minimal impact on the service. This requires strong (preferably automated) Incident and Problem Management.

The idea of Operational Health has also led to a specialized area called 'Self-Healing Systems'. This is an application of Availability, Capacity, Knowledge, Incident and Problem Management and refers to a system that has been designed to withstand the most severe operating conditions and to detect, diagnose and recover from most incidents and Known Errors. Self-Healing Systems are known by different names, for example Autonomic Systems, Adaptive Systems and Dynamic Systems.

7.2.6 COMMUNICATION:

Good communication is needed with 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.

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.

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.

Although the typical content of communication is fairly consistent once processes have been defined, the means of communication are changing with every new introduction of technology. The list of alternatives is growing and, today, includes:

- E-mail, to traditional clients or mobile devices
- SMS messages
- Pagers
- Instant messaging and web-based 'chats'
- Voice over Internet Protocol (VoIP) utilities that can turn any connected device to an inexpensive communication medium
- Teleconference and virtual meeting utilities, have revolutionized meetings which are now held across long distances
- Document-sharing utilities.

The following points should be noted:

- Communication is primary and the means of communication must ensure that they serve this goal. For example, the need for secure communication may eliminate the possibility of some of the above means.
- The need for quality may eliminate some VoIP options.

It is possible to use any means of communication as long as all stakeholders understand how and when the communication will take place.

7.2.6.1 MEETINGS:

Different organizations communicate in different ways. Where organizations are distributed, they will tend to rely on email 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. 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.

The purpose of meetings is to communicate effectively to a group of people about a common set of objectives or activities. Meetings should be

well controlled and brief, and the focus should be on facilitating action. A good rule is not to hold a meeting if the information can be communicated effectively by automated means.

Examples of typical meetings are given below:

7.2.6.1.1 THE OPERATIONS MEETING :

Operations meetings are normally held between the managers of the IT operational departments, teams or groups, at the beginning of each business day or week. The purpose is to make staff aware of any issue relevant to Operations (such as change schedules, business events, maintenance schedules, etc.) and to provide an opportunity for staff to raise any issues of which they are aware.

In geographically dispersed organizations it may not be possible to have a single daily Operations meeting. In these cases, it is important to coordinate the agenda of the meetings and to ensure that each meeting has two components:

a. The first part of the meeting will cover aspects that apply to the organization as a whole, e.g. new policies, changes that affect all regions and business events that span all regions.
b. The second part of the meeting will cover aspects thatapply only to the local region, e.g. local operations schedules, changes to local equipment, etc.

The Operations meeting is usually chaired by the IT Operations Manager or a senior Operations Manager and attended by all managers and supervisors

7.2.6.1.2 DEPARTMENT, GROUP OR TEAM MEETINGS :

These meetings are the same as the Operations meeting, but are aimed at a single IT department, group or team. Each manager or supervisor relays the information from the Operations meeting that is relevant to their team. In addition, these meetings will also cover the following:

- A more detailed discussion of incidents, problems and changes that are still being worked on, with information about:
  - Progress to date
  - Confirmation of what still needs to be done
  - Estimatedcompletion times
  - Request for additional resources, if required
  - Discussion of potential problems or concerns
- Confirmation of staff availability for roster duties
- Confirmation of vacation schedules.

7.2.6.1.3 CUSTOMER MEETINGS :

It will be necessary to hold meetings from time to time with customers, apart from the regular Service Level Review meetings.Examples include:

- Follow-up after serious incidents. The purpose is to repair the relationship with the customers, but also to ensure that IT has all the information required to prevent recurrence. Such meetings are helpful in agreeing actions for similar types of incidents that may occur in future.

- A customer forum, can be used for a range of purposes like testing ideas for new services or solutions, or gathering requirements for new or revised services or procedures. It is a regular meeting with customers to discuss areas of common concern.

7.2.7 DOCUMENTATION:

IT Operations Management and all of the Technical and Application Management teams and departments are involved in creating and maintaining a range of documents. It includes the following:

- Participation in the definition and maintenance of process manuals for all processes they are involved in. These will include processes in other phases of theIT Service Management Lifecycle (e.g. Capacity Management, Change Management, Availability Management) as well as for all processes included in the Service Operation phase.

- Establishing their own technical procedures manuals. These must be kept up to date and new material must be added as it becomes relevant, under Change Control. The procedures should always be structured to meet the objectives and constraints defined within higher-level Service Management processes, such as SLM.

- Participation in the creation and maintenance of planning documents, e.g. the Capacity and Availability Plans and the IT Service Continuity Plans.

- Participation in the creation and maintenance of the Service Portfolio. This will include quantifying costs and establishing the operational feasibility of each proposed service.

- Participation in the definition and maintenance of Service Management tool work instructions in order to meet reporting requirements.

7.3 SUMMARY

In this Chapters we have learned the objective and fundamentals of Service Operations its Purpose/goal/objective, Scope, Value to business, Optimizing Service Operation performance and different principles of Service Operation like Functions, Group, Teams, Departments and Divisions, Achieving Balance in Service Operations based on Internal IT view versus external business view, Stability versus responsiveness,

Quality of service versus cost of service & Reactive versus proactive, Providing Service,

Operation Staff involvement in Service Design and Service Transition, Operational Health, Communication involves Meetings like Operational meeting, Departmental, group or team meetings and Customer meetings and based on it preparation of Documentation.

7.4 QUESTIONS

Q1. Define Service operation. Explain the principles of service operation stage.

Q2. How to achieve balance in service operation stage.

Q3. Write short note on operational health in service operation.

Q4. Why communication is important at service operation stage?

Q5. What is different type of meetings conducted in organization as mode of communication?

Q6. Explain department, group and team meetings.

Q7. How operations meetings are different from customer meetings?

Q8. State reasons why service operation staff should be involved at service design and transition stage?

Q9. Elaborate the term Providing Service in context of service operationstage.

Q10. Explain in detail about Documentation in service operation stage.

7.5 REFERENCES

- ITIL V3 Foundation Complete Certification Kit
- Foundation of IT Service Management- The Unofficial ITIL V3 Foundation Course by Brady Orand, 2nd Edition
- ITIL V3 Service Operation by OGC/TSO

8

SERVICE OPERATION PROCESSES, CHALLENGES, CRITICAL SUCCESS FACTORS AND RISKS

Unit Structure:

8.0 Objective

8.1 Service Operation Processes

8.1.1 Event Management

8.1.2 Incident Management

8.1.3 Request Fulfilment

8.1.4 Problem Management

8.1.5 Access Management

8.1.6 Operational Activities of Processes covered in other Lifecycle Phases

8.2 Challenges, Critical Success Factors and Risks

8.2.1 Challenges

8.2.2 Critical Success Factors

8.2.3 Risks

8.3 Summary

8.4 Questions

8.5 References

8.0 OBJECTIVE

After studying this chapter, you will be able:

- To Understand the basic fundamentals of service operation stage
- To explain all the processes executed at service operation and processes need to be coordinated with at other stages of ITSM life cycle
- To understand and handle the challenges at services operation stage.
- To know critical success factors and risks.

8.1 SERVICE OPERATION PROCESSES

- **Event Management** is the process that monitors all events that occur through the IT Infrastructure to allow for normal operation and also to detect and escalate exception conditions.

- **Incident Management** concentrates on restoring the service to users as quickly as possible, in order to minimize business impact.

- **Problem Management** involves root-cause analysis to determine and resolve the cause of events and incidents, proactive activities to detect and prevent future problems/incidents and a Known Error sub-process to allow quicker diagnosis and resolution if further incidents do occur.

- **Request Fulfilment** involves the management of customer or user requests that are not generated as an incident from an unexpected service delay or disruption.

- **Access Management**: this is the process of granting authorized users the right to use a service, while restricting access to non-authorized users.

SERVICE OPERATION TERMS :

- **Incident** – Unplanned Interruption in the Quality of Service **or** the failure of a CI (even if the failure did not impact a service)
- **Alert** – A warning that some threshold has been reached (May or may not constitute an "incident")
- **Event** – An Automated detectable occurrence of significance
- **Service Request** – A user request for information or advice
- **Problem** – An unknown underlying cause of an **incident**
- **Known Error** – A **problem** that has a documented root cause and a **workaround**
- **Known Error Database (KEDB)** - The place **Problems** and **Work Around** are documented.
- **Work Around** – Means of reducing or eliminating the impact of an **incident** for which no permanent solution is available.
- **Impact, Urgency, Priority** – Priority determines the order on the daily operation. Priority is a combination of Impact and Urgency. Impact + Urgency = Priority.

8.1.1 EVENT MANAGEMENT :

Event is defined as detectable occurrence that has significance for the delivery of IT service. **Event Management** ensures that all CIs are constantly monitored and define a process to categorize these events so that appropriate action can be taken if required.

Why to have event management?

- Events are typically notifications created by an IT service, configuration item or monitoring tool
- Effective service operation is dependent on knowing the status of the infrastructure and detecting any deviation from normal or expected operation. This is provided by good monitoring and control systems, which are based on two types of tools:

- **Active monitoring tools** that poll key configuration items to determine their status and availability. Any expectations will generate an alert that needs to be communicated to the appropriate tool or team for action
- **Passive monitoring tools** that detect and correlate operational alerts or communications generated by configuration items.

8.1.1.1 PURPOSE/ GOAL/ OBJECTIVE :

The purpose of event management is

To manage events throughout their life cycle. This life cycle includes coordinationactivities to detect events. Make sense of them and determine the appropriate control action.

The objectives of event management

- To provide the entry point for the execution of many service operation processes and activities. In addition, it provides a way of comparing actual performance and behaviour against design standards and Service Level Agreements.

8.1.1.2 SCOPE :

Event Management can be applied to any aspect of Service Management that needs tobe controlled and which can be automated. These include :

- Configuration Items:

  - Some CIs will be included because they need to stay in a constant state (e.g. a switch on a network needs to stay on and Event Management tools confirm this by monitoring responses to ‘pings’).

Some CIs will be included because their status needs to change frequently and Event Management can be used to automate this and update the CMS (e.g. the updating of a file server).

- Environmental conditions (e.g. fire and smoke detection)
- Software licence monitoring for usage to ensure optimum/legal licence utilization and allocation
- Security (e.g. intrusion detection)
- Normal activity (e.g. tracking the use of an application or the performance of a server).

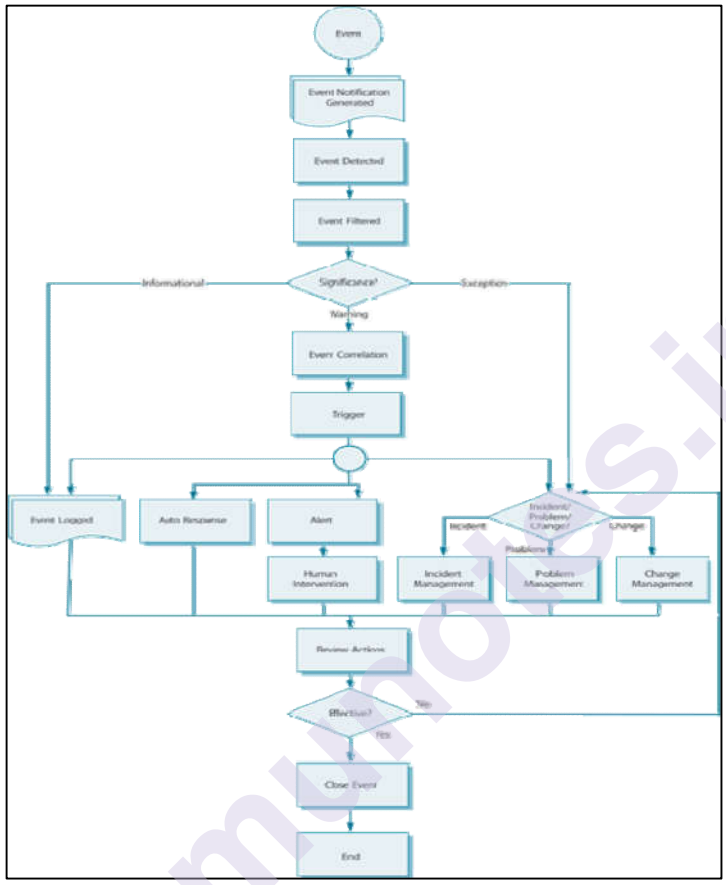

Figure 8.1 The Event Management process

8.1.1.2.1 SIGNIFICANCE OF EVENTS :

Every organization has its own categorization of the significance of an event, but threebroad categories are as follows:

- **Informational:** this refers to an event that does not require any action and does not represent an exception. They are typically stored in the system or service log files and kept for a predetermined period
- **Warning:** a warning is an event that is generated when a service or device is approaching a threshold warning are intended to notify the appropriate person, process or tool so that the situation can be checked and appropriate action taken to avoid an exception.

- **Exception:** an exception means that a service or device is currently operating abnormally. Typically, this means that an Operating Level Agreement or Service Level Agreement has been breached and the business has been impacted. Exceptions could represent a total failure, impaired functionality or degraded performance.

8.1.1.2.2 EVENT CORRELATION :

If an event is significant, a decision has to be made about exactly what the significance is and what actions need to be taken to deal with it. It is here that the meaning of the event is determined.

Correlation is done by a 'Correlation Engine', i.e. part of a management tool that compares the event with a set of criteria and rules in a prescribed order.

A Correlation Engine is programmed according to the performance standards created during Service Design and any additional guidance specific to the operating environment.

8.1.1.2.3 TRIGGER :

If the correlation activity recognizes an event, a response will be required. The mechanism used to initiate that response is called a trigger. There are different types of triggers, each designed specifically for the task it has to initiate. Some examples include:

- **Incident Triggers** that generate a record in the Incident Management system, thus initiating the Incident Management process
- **Change Triggers** that generate a Request for Change (RFC), thus initiating the Change Management process
- **Paging systems** that will notify a person or team of the event by mobile phone
- **Database triggers** that restrict access of a user to specific records or fields, or that create or delete entries in the database.

8.1.1.2.4 RESPONSE SELECTION

The response options can be chosen in any combination. There are a number of response options available.

- **Event logged:** There will be a record of the event and any subsequent actions. The event can be logged as an Event Record in the Event Management tool.

- **Auto response: S**ome events are understood well enough that the appropriate response has already been defined and automated. The trigger will initiate the action. Examples of auto responses include: rebooting a device, restarting a service, locking a device or application to protect it against unauthorised access.
- **Alert and human intervention:** The purpose of the alert is to ensure that the person with the skills appropriate to deal with the event is notified. The alert will contain all the information necessary for the person to determine the appropriate action. E.g. changing a toner cartridge in a printer when the level is low.
- **Incident, problem or change:** Some events will represent a situation where the appropriate response will need to be handled through the Incident, Problem or Change Management process. Sometimes a single incident may initiate any one or a combination of these three processes – for instance, a non-critical server failure is logged as an incident, but as there is no workaround, a Problem Record is created to determine the root cause and resolution and an RFC is logged to relocate the workload onto an alternative server while the problem is resolved.
- **Open an RFC:** There are two places in the Event Management process where an RFC can be created:

  - When an exception occurs
  - Correlation identifies that a change is needed

- **Open an Incident Record:** as with a request for change an incident can be created as soon as an exception is detected, or when the correlation engine determines that a specific type or combination of events represents an incident. When an Incident Record is opened, all possible information should be included – with links to the concerned events and a completed diagnostic script.

- **Open or link to a Problem Record:** It is rare for a problem record to be opened without related incidents. In most cases this step refers to linking an incident to an existing problem record.

- **Special types of incidents:** In some cases, an event will indicate an exception that does not directly impact any IT service, for example, a redundant air conditioning unit fails, or unauthorized entry to a data centre.

8.1.1.2.5 REVIEW ACTIONS :

With thousands of events being generated every day, it is not possible to review every individual event. However, it is important to check that any significant events or exceptions have been handled appropriately, or to track trends or counts of event types, etc. In many cases this can be done automatically, for instance, polling a server that had been rebooted using an automated script to see that it is functioning correctly. The Review will also be used as input into continual improvement and the evaluation and audit of the Event Management process.

8.1.1.2.6 CLOSE EVENT :

Some events will remain open until a certain action takes place, for example an event that is linked to an open incident. However, most events are not 'opened' or 'closed'.

Informational events are simply logged and then used as input to other processes, such as Backup and Storage Management. **Auto-response events** will be closed by the generation of a second event. For instance, a device generates an event and is rebooted through auto response – as soon as that device is successfully back online, it generates an event that effectively closes the loop and clears the first event.

In the case of events that generated an incident, problem or change, these should be formally closed with a link to the appropriate record from the other process.

8.1.2 INCIDENT MANAGEMENT

In ITIL terminology, an 'incident' is defined as: An unplanned interruption to an IT service. Failure of a configuration item that has not yet impacted service is also an incident, for example failure of one disk from a mirror set.

Incident Management is the process for dealing with all incidents; this can include failures, questions or queries reported by the users

Why to have incident management?

- Incident management is highly visible to the organization, and it is therefore easier to demonstrate its value than in most areas of service operation.
- For this reason, incident management is often one of the first processes to be implemented in service management projects.

- The added benefit of doing this is that incident management can be used to highlight other areas that need attention, thereby providing a justification for implementing other ITIL processes

8.1.2.1 PURPOSE/GOAL/OBJECTIVE :

The **purpose** of Incident Management is to restore the service to the previous stage as early as possible

The **primary goal and objective** of the Incident Management process is to restore normal service operation as quickly as possible and minimize the adverse impact on business operations, thus ensuring that the best possible levels of service quality and availability are maintained.

8.1.2.2 SCOPE :

Incident Management includes any event which disrupts, or which could disrupt, a service. This includes events which are communicated directly by users, either through the Service Desk or through an interface from Event Management to Incident Management tools.

Incidents can also be reported and/or logged by technical staff, for instance, technical staff notice something untoward with a hardware or network component they may report or log an incident and refer it to the Service Desk. This does not mean, that all events are incidents.

8.1.2.3 VALUE TO BUSINESS :

The value of Incident Management includes:

- The ability to detect and resolve incidents which results in lower downtime to the business, which in turn means higher availability of the service.
- The ability to align IT activity to real-time business priorities.
- The ability to identify potential improvements to services. This happens as a result of understanding what constitutes an incident and also from being in contact with the activities of business operational staff.
- The Service Desk can, during its handling of incidents, identify additional service or training requirements found in IT or the business.

8.1.2.4 PROCESS ACTIVITIES, METHODS AND TECHNIQUES :

The process to be followed during the management of an incident is shown in Figure 8.2. The process includes the following steps.

8.1.2.4.1 INCIDENT IDENTIFICATION :

Work cannot begin on dealing with an incident until it is known that an incident has occurred. It is usually unacceptable, from a business perspective, to wait until a user is impacted and contacts the Service Desk. All key components should be monitored so that potential failures are detected early to quickly start the Incident Management process.

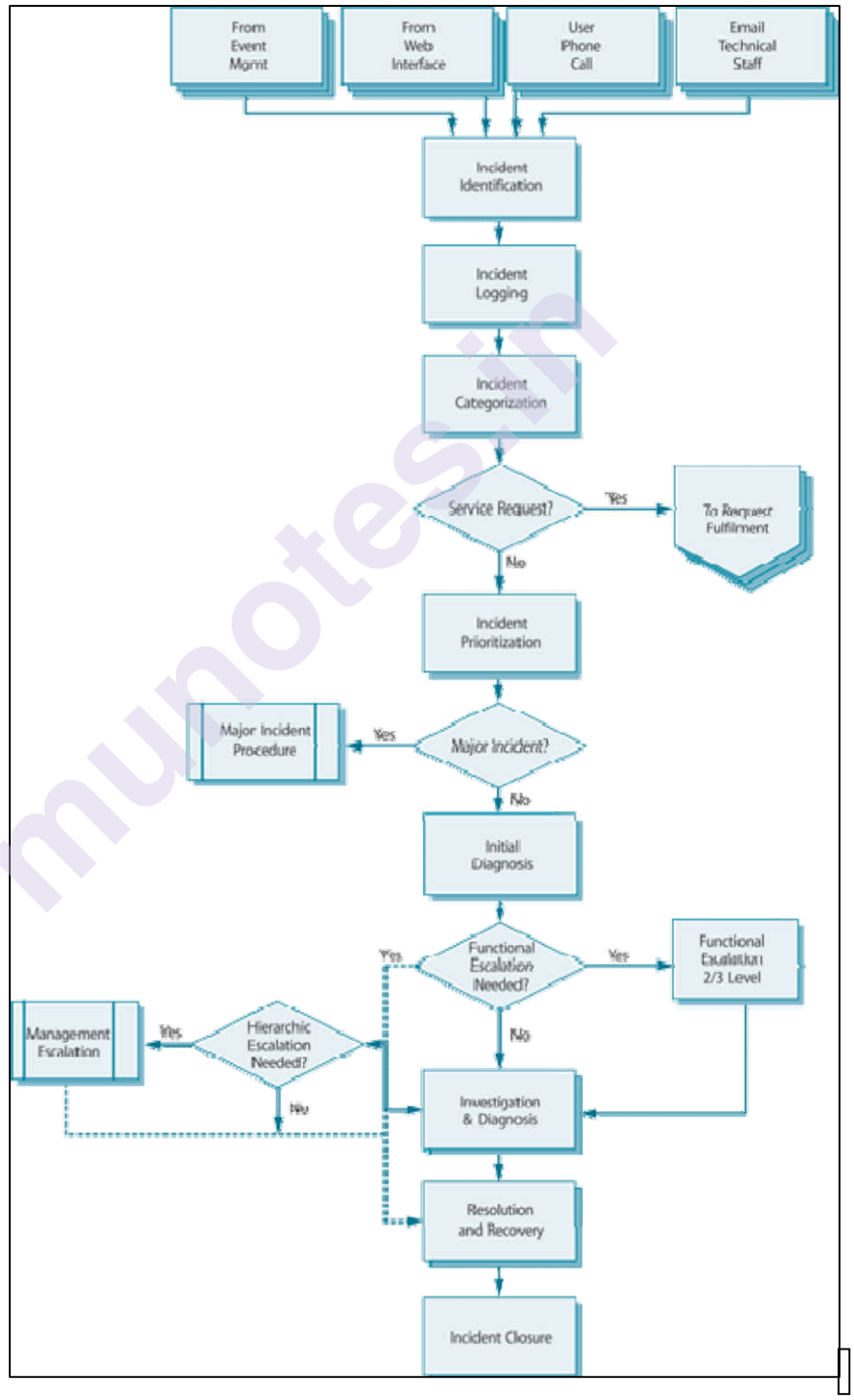

Figure 8.2 Incident Management process flow

8.1.2.4.2 INCIDENT LOGGING :

All incidents must be fully logged and date/time stamped, regardless of whether they are raised through a Service Desk telephone call or whether automatically detected via an event alert. The information needed for each incident is likely to include:

- Unique reference number
- Incident categorization (often broken down into between two and four levels of sub-categories)
- Incident urgency, impact &prioritization
- Date/time recorded
- Name/ID of the person and/or group recording the incident
- Method of notification (telephone, automatic, e-mail, in person, etc.)
- Name/department/phone/location of user
- Call-back method (telephone, mail, etc.)
- Description of symptoms
- Incident status (active, waiting, closed, etc.)
- Related CI
- Support group/person to which the incident is allocated
- Related problem/Known Error
- Activities undertaken to resolve the incident
- Resolution date and time
- Closure category & Closure date and time.

8.1.2.4.3 INCIDENT CATEGORIZATION :

The initial logging must be to allocate suitable incident categorization coding so that the exact type of the call is recorded. This will be important later when looking at incident types/frequencies to establish trends for use in Problem Management, Supplier Management and other ITSM activities.

For instance, an incident may be categorized as shown in Figure 8.3.

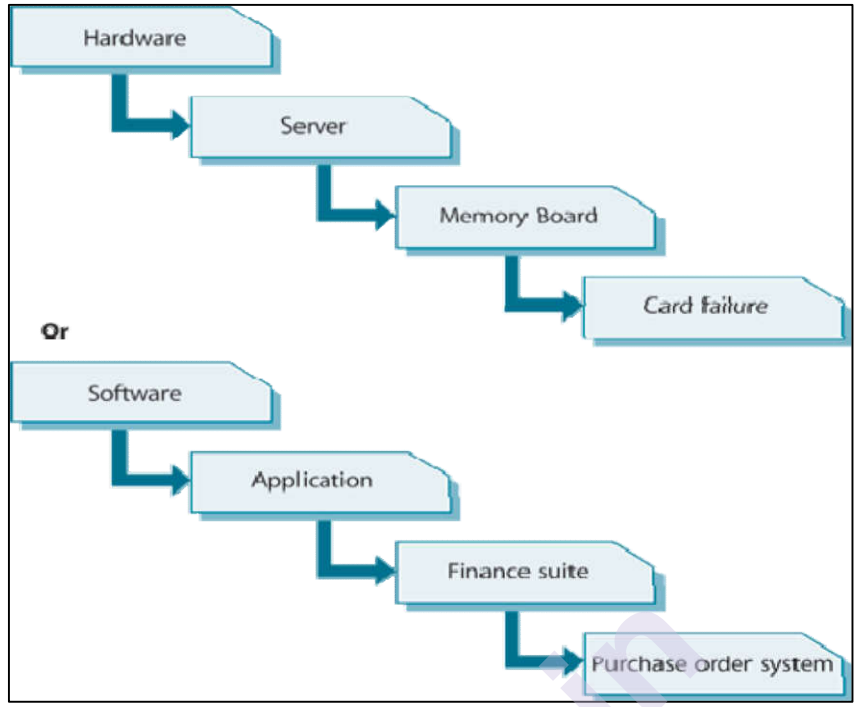

Figure 8.3 Multi-level incident categorization

All organizations are unique and it is difficult to give generic guidance on the categories an organization should use, particularly at the lower levels. However, there is a technique that can be used to assist an organization to achieve a correct and complete set of categories

8.1.2.4.4 INCIDENT PRIORITIZATION :

Prioritization can normally be determined by taking into account both the urgency of the incident and the level of impact it is causing. An indication of impact is often the number of users being affected. In some cases, the loss of service to a single user can have a major business impact – it all depends upon who is trying to do what – so numbers alone is not enough to evaluate overall priority! Other factors that can also contribute to impact levels are:

- Risk to life or limb
- The number of services affected – may be multiple services
- The level of financial losses
- Effect on business reputation
- Regulatory or legislative breaches.

An effective way of calculating these elements and deriving an overall priority level for each incident is given in Table 8.1:

			Impact	
		High	Medium	Low
	High	1	2	3
Urgency	Medium	2	3	4
	Low	3	4	5

Priority Code	Description	Target resolution time
1	Critical	1 hour
2	High	8 hours
3	Medium	24 hours
4	Low	48 hours
5	Planning	Planned

Table 8.1 Simple priority coding system

8.1.2.4.5 INITIAL DIAGNOSIS :

If the incident has been routed via the Service Desk, initial diagnosis must be carried out by the Service Desk Analyst while the user is still on the telephone – if the call is raised – to try to discover the full symptoms of the incident and to determine exactly what has gone wrong and how to correct it. It is at this stage that diagnostic scripts and known error information can be most valuable in allowing earlier and accurate diagnosis.

8.1.2.4.6 INCIDENT ESCALATION :

Functional escalation, as soon as it becomes clear that the Service Desk is unable to resolve the incident itself the incident must be immediately escalated for further support.

8.1.2.4.7 INVESTIGATION AND DIAGNOSIS :

Investigation is likely to include following actions as:

- Establishing exactly what has gone wrong or being sought by the user
- Understanding the chronological order of events
- Confirming the full impact of the incident, including the number and range of users affected
- Identifying any events that could have triggered the incident (e.g. a recent change, some user action?)
- Knowledge searches looking for previous occurrences by searching previous Incident/Problem Records and/or Known
- Error Databases or manufacturers'/suppliers' Error Logs or Knowledge Databases.

8.1.2.4.8 RESOLUTION AND RECOVERY :

Resolve the incident using the solution/work around or, alternatively, raise a request for change (RFC) (including a check for resolution) and Take recovery actions. The resolving group should pass the incident back to the Service Desk for closure action.

8.1.2.4.9 INCIDENT CLOSURE :

The Service Desk should check that the incident is fully resolved and that the users are satisfied and willing to agree the incident can be closed.

The Service Desk should also check the following:

- **Closure categorization.** Check and confirm that the initial incident categorization
- **User satisfaction survey.** Carry out a user satisfaction callback or e-mail survey for the agreed percentage of incidents.
- **Incident documentation.** ensure that the Incident Record is fully documented
- **Ongoing or recurring** problem**?** Determine whether it is likely that the incident could recur and decide whether any preventive action is necessary to avoid this.
- **Formal closure.** Formally close the Incident Record

8.1.3 REQUEST FULFILMENT

This process deals with handling requests such as change password, create new user and create email id etc.

Why to have request fulfilment?

- Request fulfilment is the process for dealing with service requests via the Service Desk, using a process similar but separate to that of incident management.
- Request fulfilment records/tables are linked, where necessary, to the incident or problem record(s) that initiated the need for the request.
- For a **service request**, it is normal for some prerequisites to be defined and met (e.g. needs to be proven, repeatable, pre-approved and documented as a procedure).
- These are viewed as standard changes – procurement, HR and other business units may assist/be involved

8.1.3.1 PURPOSE/GOAL/OBJECTIVE

Request Fulfilment is the processes of dealing with Service Requests from the users. The objectives of the Request Fulfilment process include:

- To provide a channel for users to request and receive standard services for which a pre-defined approval and qualification process exists
- To provide information to users and customers about the availability of services and the procedure for obtaining them
- To source and deliver the components of requested standard services
- (e.g. licences and software media)
- To assist with general information, complaints or comments.

8.1.3.2 SCOPE :

The process needed to fulfil a request will vary depending upon exactly what is being requested – but can usually be broken down into a set of activities that have to be performed.

Requests can be handled through the incident management processes (and tools) – with service requests being handled as a particular type of incident (using a high-level categorization system to identify service requests). However, there is a significant difference – an incident is an unplanned event whereas a service request is usually something that can and should be planned.

8.1.3.3 VALUE TO BUSINESS :

The value of Request Fulfilment is to provide quick and effective access to standard services which business staff can use to improve their productivity or quality of business services and products.

It reduces the bureaucracy involved in requesting and receiving access to existing or new services, thereby reducing the cost of providing these services.

8.1.3.4 PROCESS ACTIVITIES, METHODS AND TECHNIQUES :

8.1.3.4.1 MENU SELECTION-

Request Fulfilment offers great opportunities for self-help practices where users can generate a Service Request using technology that links into Service Management tools. Ideally, users should be offered a 'menu'-type selection via a web interface, so that they can select and input details of Service Requests from a pre-defined list.

8.1.3.4.2 FINANCIAL APPROVAL -

- One important step that is likely to be needed when dealing with a service request is that of financial approval.
- Most requests will have some form of financial implication, regardless of the type of commercial arrangements in place.
- The cost of fulfilling the request must first be established. It may be possible to agree fixed prices for standard requests – and prior approval for such requests may be given as part of the organisation's overall annual financial management.
- In all other cases, an estimate of the cost must be produced and submitted to the user for financial approval.
- If approval is given, in addition to fulfilling the request, the process must also include charging for the work done – if charging is in place.

8.1.3.4.3 OTHER APPROVAL-

In some cases, further approval may be needed – such as compliance related or wider business approval. Request Fulfilment must have the ability to define and check such approvals where needed.

8.1.3.4.4 FULFILMENT -

The actual fulfilment activity will depend upon the nature of the Service Request. Some simpler requests may be completed by the Service Desk, acting as firstline support, while others will have to be forwarded to specialist groups and/or suppliers for fulfilment.

The Service Desk should monitor and chase progress and keep users informed throughout, regardless of the actual fulfilment source.

8.1.3.4.5 CLOSURE -

When the service request has been fulfilled it must be referred back to the Service Desk for closure – the Service Desk will check that the user is satisfied with the outcome.

8.1.4 PROBLEM MANAGEMENT:

ITIL defines a 'problem' as the cause of one or more incidents. This process deals with finding root cause of the problem and prevent incident to occur again.

Why to have problem management?

- Failure to halt the recurrence of incidents or understand the root cause of major incidents leads to lost time, loss of productivity and frustrated users.
- Effective problem management halts the recurrence of incidents and has benefits to the individual and the organisation as a whole as it improves availability (up time) and user productivity.

8.1.4.1 PURPOSE/GOAL/OBJECTIVE :

The objective of problem management is to minimise the adverse impact of incidents and problems on the business that are caused by errors within the IT infrastructure, and to prevent recurrence of incidents related to these errors.

8.1.4.2 SCOPE :

Problem management includes the activities required to diagnose the root cause of incidents and to determine the resolution to the problems.

It is also responsible for ensuring that the resolution is implemented through the appropriate control procedures (change management).

Problem management will also maintain information about problems and the appropriate work arounds and resolutions.

8.1.4.3 VALUE TO BUSINESS

Problem Management works together with Incident Management and Change Management to ensure that IT service availability and quality are increased. When incidents are resolved, information about the resolution is recorded. Over time, this information is used to speed up the resolution time and identify permanent solutions, reducing the number and resolution time of incidents. This results in less downtime and less disruption to business-critical systems.

8.1.4.4 PROCESS ACTIVITIES, METHODS AND TECHNIQUES

Problem Management consists of two major processes:

- **ReactiveProblem Management**, which is executed as part of Service Operation – Concerned with solving problems in response to one or more incidents
- **Proactive Problem Management**which is initiated in Service Operation, but generally driven as part of Continual Service Improvement.

The Problem Management process is shown in **Figure 8.4.**

8.1.4.4.1 REACTIVE ACTIVITIES

The reactive activities are:

- **Problem detection and problem logging**

- Use incident guidelines for problem identification

- Other processes (e.g. availability, security) could log problems prior to incident occurring

- **Problem categorization and prioritization**

- Categorize the problem by IT functional area

- Assess urgency and impact to assign priority

- **Problem investigation and diagnosis**

- Assign to IT functional area for further investigation

- **Workarounds and raising a known error record –**
- In cases where a work around is found, it is important that the problem record remains open, and details of the work around are documented within the problem record

- As soon as the diagnosis is complete, and particularly where a work around has been found (even though it may not be a permanent resolution), a known error record must be raised and placed in the Known Error Database, so that, if further incidents or problems arise, they can be identified and the service restored more quickly

- **Problem resolution**
- Problem record closed when known error located and work around identified

- **Problem closure**
  - Problem record closed when known error located and work around identified

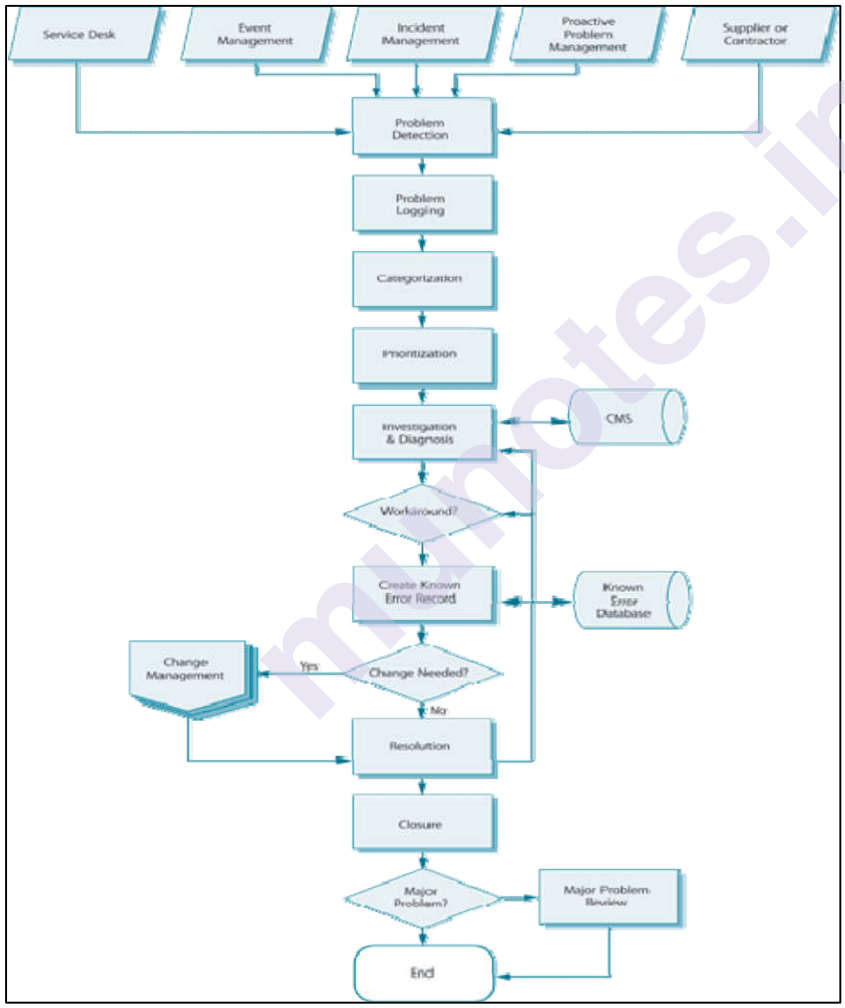

Figure 8.4 Problem Management process flow

8.1.4.4.2 PROACTIVE ACTIVITIES :

The proactive activities are:

- Major problem review and errors detected in the development environment

After every major problem, and while memories are still fresh, a review should be conducted to learn any lessons for the future. The review should examine:

- Those things that were done correctly
- Those things that were done wrongly
- What could be done better in the future
- How to prevent recurrence
- Whether there has been any third-party responsibility and whether follow up actions are needed

8.1.4.4.3 MAJOR PROBLEM REVIEW :

Such reviews can be used as part of training and awareness activities for staff – any lessons learned should be documented in appropriate procedures, working instructions, diagnostic scripts or known error records.

- **Tracking and monitoring**

The Service Desk Manager owns/is accountable for ALL incidents. Tracking and monitoring takes place throughout all of the other activities.

- **Trend analysis**

Review reports from other processes (e.g. incident management, availability management, change management) and Identify recurring problems or training opportunities.

- **Targeting preventative action**

Perform a cost benefit analysis of all costs associated with prevention. Target specific areas taking up most attention.

8.1.5 ACCESS MANAGEMENT:

This process deals with granting rights to authorized user to use the service. **Access Management** deals with granting access to authorized access while preventing access to non-authorized users. Access Manager is the process owner of this process.

Why to have access management?

Access management is the process of granting authorized users the right to use a service, while preventing access to non-authorized users. It is, therefore, the execution of policies and actions defined in information security and availability management

8.1.5.1 PURPOSE/GOAL/OBJECTIVE :

The objectives of access management

- Protecting Confidentiality, Integrity and Availability (CIA), sometimes known as Rights Management or Identity Management (removing access when people change roles or jobs and regularly auditing access permissions to ensure they are correct)
- Security incidents and problems related to access management will be discreetly recorded

8.1.5.2 SCOPE :

Access Management is effectively the execution of both Availability and Information Security Management, in that it enables the organization to manage the confidentiality, availability and integrity of the organization's data and intellectual property.

Access Management ensures that users are given the right to use a service, but it does not ensure that this access is available at all agreed times – this is provided by Availability Management.

8.1.5.3 VALUE TO BUSINESS :

Access Management provides the following value:

- Controlled access to services ensures that the organization is able to maintain more effectively the confidentiality of its information
- Employees have the right level of access to execute their jobs effectively
- There is less likelihood of errors being made in data entry or in the use of a critical service by an unskilled user (e.g. production control systems)
- The ability to audit use of services and to trace the abuse of services
- The ability more easily to revoke access rights when needed – an important security consideration

8.1.5.4 BASIC CONCEPTS :

Access Management is the process that enables users to use the services that are documented in the Service Catalogue. It comprises the following basic concepts:

- **Access** refers to the level and extent of a service's functionality or data that a user is entitled to use.
- **Identity** refers to the information about them that distinguishes them as an individual and which verifies their status within the organization. By definition, the Identity of a user is unique to that user.

- **Rights** (also called privileges) refer to the actual settings whereby a user is provided access to a service or group of services, include read, write, execute, change, delete.
- **Services or service groups are** group of users – access to the whole set of services that they are entitled to use at the same time.
- **Directory Services** refers to a specific type of tool that is used to manage access and rights.

8.1.5.5 PROCESS ACTIVITIES, METHODS AND TECHNIQUES :

8.1.5.5.1 REQUESTING ACCESS :

Access (or restriction) can be requested using one of any number of mechanisms, including:

- A standard request generated by the Human Resource system., whenever a person is hired, promoted, transferred or when they leave the company
- A Request for Change
- A Service Request submitted via the Request Fulfilment system
- By executing a pre-authorized script or option (e.g. downloading an application from a staging server as and when it is needed).

Rules for requesting access are normally documented as part of the Service Catalogue.

8.1.5.5.2 VERIFICATION

Access Management needs to verify every request for access to an IT service from two perspectives:

- First, the user requesting access is who they say they are, it can be achieved by the user providing their username and password.
- Second, that they have a legitimate requirement for that service. This require some independent verification, other than the user's request.

8.1.5.5.3 PROVIDING RIGHTS

- Access Management does not decide who has access to which IT services. Rather, it executes the policies and regulations defined during Service Strategy and Service Design. Access Management enforces decisions to restrict or provide access, rather than making the decision.

8.1.5.5.4 MONITORING IDENTITY STATUS

- As users work in the organization, their roles change as do their needs to access services, e.g. job changes, promotions/demotions, resignation or death.
- Access management should understand and document the typical user lifecycle for each type of user and use it to automate the process.
- Access management tools should provide features that enable a user to be moved from one state to another easily and with an audit trail.

8.1.5.5.5 LOGGING AND TRACKING ACCESS

- Access management should not only respond to requests. It is also responsible for ensuring that the rights that have been provided are being properly used.

- Information security management plays a vital role in detecting unauthorized access and comparing it with the rights that were provided by access management.

- Access management may also be required to provide a record of access for specific services during forensic investigations.

8.1.5.5.6 REMOVING OR RESTRICTING RIGHTS

Just as Access Management provides rights to use a Service, it is also responsible for revoking those rights. Again, this is not a decision that it makes on its own. Rather, it will execute the decisions and policies made during Service Strategy and Design and also decisions made by managers in the organization. Removing access is usually done in the following circumstances:

- Death
- Resignation
- Dismissal
- When the user has changed roles and no longer requires access to the service
- Transfer or travel to an area where different regional access applies.

8.1.6 OPERATIONAL ACTIVITIES OF PROCESSES COVERED IN OTHER LIFECYCLE PHASES:

8.1.6.1 CHANGE MANAGEMENT:

Change Management is primarily covered in the Service Transition stage, but there are some aspects of Change Management which Service Operation staff will be involved with on a day-to-day basis. Like raising

and submitting RFCs as needed to address Service Operation issues, implementing changes as directed by Change Management where they involve Service Operation component or services etc.

8.1.6.2 CONFIGURATION MANAGEMENT :

Configuration Management is primarily covered in the Service Transition stage, but Service Operation staff will be involved on a day-to-day basis. These include:

- Informing Configuration Management of any discrepancies found between any CIs and the CMS
- Making any amendments necessary to correct any discrepancies, under the authority of Configuration Management, where they involve any Service Operation components or services.

8.1.6.3 RELEASE AND DEPLOYMENT MANAGEMENT :

Release and Deployment Management is primarily covered in the Service Transition stage, but Service Operation staff will be involved with on a day-to-day basis. These may include:

- Actual implementation actions regarding the deployment of new releases, under the direction of Release and Deployment Management, where they relate to Service Operation components or services
- Participation in the planning stages of major new releases to advise on Service Operation issues
- The physical handling of CIs as required to fulfil their operational roles

8.1.6.4 CAPACITY MANAGEMENT :

Capacity Management should operate at three levels:

- **Business Capacity Management** involves working with the business to plan and anticipate both longer-term strategic issues and shorter-term tactical initiatives that are likely to have an impact on IT capacity.

- **Service Capacity Management** is about understanding the characteristics of each of the IT services, and then the demands that different types of users or transactions have on the underlying infrastructure

- **Resource Capacity Management** involves understanding the performance characteristics and capabilities and current utilization levels of all the technical components (CIs) that make up the IT Infrastructure, and predicting the impact of any changes or trends.

8.1.6.5 DEMAND MANAGEMENT :

This process maintains balance between consumption of services and their delivery. There are other aspects of Demand Management that are of a more operational nature, requiring shorterterm action.

8.1.6.6 WORKLOAD MANAGEMENT :

Sometimes optimization of infrastructure resources is needed to maintain or improve performance. This can be done through Workload Management, which is a generic term to cover such actions as:

- Rescheduling a particular service or workload to run at a different time of day
- Moving a service or workload from one location or set of CIs to another
- Technical Virtualization: setting up and using virtualization systems to allow movement of processing around the infrastructure to give better performance/resilience in a dynamic fashion.
- Limiting or moving demand for resources through Demand Management techniques.

8.1.6.7 MODELLING AND APPLICATIONS SIZING :

Modelling and/or sizing of new services and/or applications mustbe done during the planning and transition phases –the Service Operation functions have a role to play in evaluating the accuracy of the predictions and feeding back any issues or discrepancies.

8.1.6.8 CAPACITY PLANNING :

During Service Design and Service Transition, the capacity requirements of IT services are calculated. Service operation will ensure to maintain, update and review the capacity plan regularly

8.1.6.9 AVAILABILITY MANAGEMENT :

During Service Design and Service Transition, IT services are designed for availability and recovery. Service Operation is responsible for actually making the IT service available to the specified users at the required time and at the agreed levels.

8.1.6.10 KNOWLEDGE MANAGEMENT :

It is vitally important that all data and information that can be useful for future Service Operation activities are properly gathered, stored and assessed. Key repositories of Service Operation, which have been frequently mentioned elsewhere, are the CMS and the KEDB, but this must be widened out to include all of the Service Operation teams' and departments' documentation, such as operations manuals, procedures manuals, work instructions, etc.

8.1.6.11 FINANCIAL MANAGEMENT FOR IT SERVICES :

Service Operation staff must participate in and support the overall IT budgeting and accounting system – and may be actively involved in any charging system that may be in place. The Service Operation Manager must also be involved in regular, at least monthly, reviews of expenditure against budgets – as part of the ongoing IT budgeting and accounting process. Discrepancies must be identified and necessary adjustments made.

8.1.6.12 IT SERVICE CONTINUITY MANAGEMENT :

Service Operation functions are responsible for the testing and execution of system and service recovery plans as determined in the IT Service Continuity Plans for the organization. In addition, managers of all Service Operation functions must be on the Business Continuity Central Coordination team.

8.2 CHALLENGES, CRITICAL SUCCESS FACTORS AND RISKS

8.2.1 CHALLENGES :

There are a number of challenges faced within Service Operation that need to be overcome. These include

8.2.1.1 LACK OF ENGAGEMENT WITH DEVELOPMENT & PROJECT STAFF :

Traditionally, there has been a separation between Service Operation staff and those staff involved in developing new applications or running projects that will eventually deliver new functionality into the operational environment.

ITSM is seen as something that has been initiated in the operational areas and is nothing to do with development or projects.

8.2.1.2 JUSTIFYING FUNDING :

It is often difficult to justify expenditure in the area of Service Operation, as money spent in this sphere is often regarded as 'infrastructure costs' – with nothing new to show for the investment.

8.2.1.3 CHALLENGES FOR SERVICE OPERATION MANAGERS :

The following is a list of some of the challenges that Managers in Service Operation should expect to face.

The differences between Design activities and Operational activities will continue to present challenges. This is for a number of reasons, including the following.

- 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.
- Service Transition that is not used effectively to manage the transition between the Design and Operation phases.

These challenges can only be dealt with if Service Operation staff are involved in Service Design and Transition.

8.2.2 CRITICAL SUCCESS FACTORS :

8.2.2.1 MANAGEMENT SUPPORT :

Senior and Middle Management support is needed for all ITSM activities and processes, particularly in-Service Operation.

They should also be fully informed of the dire results that can occur because of poor Service Operation. Senior Management must provide visible support during the launch of new Service Operation initiatives and their ongoing support must be equally well demonstrated.

8.2.2.2 BUSINESS SUPPORT :

It is important that the Business Units also support Service Operation. It is equally important that the Business Units understand, accept and carry out the role they play in Service Operation. Good service requires good customers.

8.2.2.3 CHAMPIONS :

The champions may be senior managers who are leading from the top. But champions can also be successful if they come from other tiers of the organization.

Champions emerge over time, they cannot be created or appointed. It is important to recognize that the highly motivated staff often voluntarily take on the greatest workloads. They should be given a chance to work as the champion.

8.2.2.4 STAFFING AND RETENTION :

Having the appropriate number of staff with the appropriate skills is critical to the success of Service Operation. Some challenges that need to be overcome include the following.

- Projects for new services are about specifying required new skills, but often underestimate the number of staff required and how to retain the new skills.
- Scarcity of resources who have a good understanding of Service Management. Having good technical people is necessary, but there needs to be a number of key people who are able to move between technology issues and service issues.
- Since these resources are fairly scarce it is quite common to train them, only to have them resign and join another company for a better salary. Clear career paths and good incentives should be part of every Service Management initiative.
- Attempting to assign too much, too soon, to existing staff. Achieving efficient Service Operation will take time, but if approached correctly it will be achieved.

8.2.2.5 SERVICE MANAGEMENT TRAINING :

Adequate training and awareness can have much wider overall benefits. Training required for successful Service Management includes:

- Training IT staff on the processes that have been implemented.
- Training on ‘soft’ or ‘people’ skills, especially for those staff in customerfacing positions
- Training about understanding the business, and the importance of achieving a service culture
- Training on how to use and manage tools
- Also, customers and users need appropriate training on how to work with IT – access services, request changes, submit requests, use tools, etc.

8.2.2.6 SUITABLE TOOLS :

Many Service Operation processes and activities cannot be performed effectively without adequate support tools. Senior management must ensure that funding for such tools is included in ongoing budgets and support their procurement, deployment and ongoing maintenance.

8.2.2.7 VALIDITY OF TESTING :

The quality of IT services that can be provided in Service Operation is dependent upon the quality of systems and components delivered into the operational environment.

The quality level will be enhanced if adequate and complete testing of new components and releases is carried out in good time. Documentation should also be tested for completeness and quality. This requires a comprehensive and realistic testing environment to be in place for all systems/components. There should be independent testers wherever possible.

8.2.2.8 MEASUREMENT AND REPORTING :

A clear definition is needed of how things will be measured and reported so that all staff have clear targets to aim for and IT and Business Managers are able to quickly and easily review progress and pinpoint any areas for attention.

8.2.3 RISKS :

Failure to meet the challenges already described in section 9.1 or to address the Critical Success Factors outlined in section 9.2 are obvious risks – but others are described as set out below.

8.2.3.1 SERVICE LOSS :

The ultimate risk to the business of weaknesses in Service Operation is the loss of critical IT services with subsequent adverse impact on its employees, customers and finances. In extreme cases there may be potential loss to life and limb where the IT services affected are used for critical health or safety purposes – such as emergency vehicle deployment or health scanning, etc.

8.2.3.2 RISKS TO SUCCESSFUL SERVICE OPERATION :

The risks to achieving successful Service Operation are numerous – and in many cases are the opposite of the Critical Success Factors as described earlier – but also include:

- **Inadequate funding and resources:** Funding must be justified, allocated and held in reserve for its original purpose.
- **Loss of momentum:** mechanisms should be in place to ensure that the initiative survives organizational changes.
- **Loss of key personnel:** Sometimes the loss of one or two key personnel can have a severe impact: to minimize this effect, organizations should seek to cross-train staff and reduce dependencies upon individuals.
- **Resistance to change:** Sometimes people object to new things and are reluctant to take them on board. Education, training, communication and highlighting benefits will help.
- **Lack of management support:** This often occursamong Middle Managers who may not see the overall vision or gain the hands-on benefits that more junior staff may gain.
- **Differing customer expectations.** While operational staff are encouraged to execute against standards, customer and user expectations sometimes differ. In other cases, one customer may have paid more for a superior service, but when a user from a different area sees the superior service, they feel cheated. This problem should be resolved through clear SLM and careful communication during Service Design. Complaints should be taken up through Continual Service Improvement processes.

8.3 SUMMARY

In this Chapters we have learned different types of Service Operation Processes like Event Management, Incident Management, Request Fulfilment, Problem Management and Access Management. Operational Activities of Processes covered in other Lifecycle Phases like Challenges, Critical Success Factors and Risks.

8.4 QUESTIONS

1) Describe the objectives of service operation phase.
2) Define Event. Why we need Event management process?
3) Explain different types of events.
4) List and explain all activities carried in Event management process
5) Explain purpose, objectives and scope of event management.
6) Explain in detail the Incident Management Process

7) Explain objective and scope of Incident management process.
8) Write short note on Incident Management Lifecycle activities.
9) Explain why to have incident management. How it will add value to business?
10) State and explain all activities carried out in incident management process.
11) Explain Request Fulfilment process.
12) Explain objectives and scope of Request Fulfilment process.
13) Write a short note on activities of Request Fulfilment process.
14) Explain why to have Request Fulfilment Process. How it will add value to business?
15) Define the following terms: (a) Alert (b) Known Error (c) Workaround (d) Problem (e) Priority
16) What checks to be made while closing Incident at incident Closure stage?
17) Explain Problem management in detail.
18) Explain objectives and scope of Problem management.
19) Explain in detail access management process.
20) Define objective and scope of access management process.
21) Explain any three basic concepts of access management.
22) Explain any three operational activities of processes covered in other Lifecycle phases
23) List and explain the challenges in service operation phase.
24) List and explain the critical success factors in service operation phase.
25) List and explain the risks involved in service operation phase.

8.5 REFERENCES

- ITIL V3 Foundation Complete Certification Kit
- Foundation of IT Service Management- The Unofficial ITIL V3 Foundation Course by Brady Orand, 2nd Edition
- ITIL V3 Service Operation by OGC/TSO

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9

CONTINUAL SERVICE IMPROVEMENT PRINCIPLES, CSI PROCESSES, CSI METHODS AND TECHNIQUES

Unit Structure:

9.0 Objective

9.1 Continual Service Improvement (CSI) Principles:

- 9.1.1 CSI Approach
- 9.1.2 CSI and organizational change
- 9.1.3 Ownership
- 9.1.4 CSI register
- 9.1.5 External and Internal drivers
- 9.1.6 Service level management
- 9.1.7 Knowledge management
- 9.1.8 The Deming cycle
- 9.1.9 Service Measurement
- 9.1.10 IT governance
- 9.1.11 Frameworks, models standards and quality Systems
- 9.1.12 CSI inputs and outputs

9.2 Continual Service Improvement (CSI) Process:

- 9.2.1 The seven-step improvement process

9.3 CSI Methods and Techniques:

- 9.3.1 Methods and techniques
- 9.3.2 Assessments
- 9.3.3 Benchmarking
- 9.3.4 Service Measurement
- 9.3.5 Metrics
- 9.3.6 Return on Investment

9.3.7 Service reporting

9.3.8 CSI and other service management processes

9.4 Organising for CSI:

9.4.1 Organisational development

9.4.2 Functions, Roles

9.4.3 Customer Engagement

9.4.4 Responsibility model – RACI

9.4.5 Competence and training.

9.5 Summary

9.6 Questions

9.7 References

9.0 OBJECTIVES

- Service improvement must focus on increasing the efficiency, maximizing the effectiveness, and to optimize the cost of services and the underlying ITSM processes.
- The only way to do this is to ensure that opportunities for improvement are identified throughout the entire service lifecycle.
- This chapter will go into more detail on this. What do you measure and where do you find information? These are two especially important questions and should not be ignored or taken lightly.
- To ensure consistency of execution and effective measurement, especially for the activities of gathering and processing data, the techniques and methodologies used should be clearly documented in advance and communicated to the staff that will be responsible for their execution.

9.1 CONTINUAL SERVICE IMPROVEMENT (CSI) PRINCIPLES

9.1.1 Continual Service Improvement (CSI) Approach :

The primary purpose of CSI is to continually align and realign IT services to the changing business needs by identifying and implementing improvements to IT services that support business processes. These improvement activities support the lifecycle approach through Service Strategy, Service Design, Service Transition and Service Operation. In effect, CSI is about looking for ways to improve process effectiveness, efficiency as well as cost effectiveness. The improvement process can be summarized in six steps:

- Embrace the vision by understanding the high-level business objectives. The vision should align the business and IT strategies.
- Assess the current situation to obtain an accurate, unbiased snapshot of where the organization is right now. This baseline assessment is an analysis of the current position in terms of the business, organization, people, process and technology.
- 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.
- Finally, the process should ensure that the momentum for quality improvement is maintained by assuring that changes become embedded in the organization.

9.1.2 CSI and organizational change :

Improvement in the service management is to embark upon an organizational change programme. Many organizational change programs fail to achieve the desired results. Successful ITSM requires an understanding the way in which work is done and putting in place a programme of change within the IT organization. This type of change is, by its very nature, prone to difficulties. It involves people and the way they work. People in general do not like to change; the benefits must be explained to everyone to gain their support and to ensure that they break out of old working practices. Those responsible for managing and steering organizational change should consciously address these softer issues. Using methods such as John P. Kotter's*Eight Steps To Transforming Your Organization*, coupled with formalized project management skills and practices, will significantly increase the chance of success.

9.1.3 Ownership :

The principle of ownership is fundamental to any improvement strategy. CSI is a best practice and one of the keys to successful implementation is to ensure that a specific manager, a CSI manager, is responsible for ensuring the best practice is adopted and sustained throughout the organization. The CSI manager becomes the CSI owner and chief advocate. The CSI owner is accountable for the success of Continual Service Improvement in the organization. This ownership responsibility extends beyond ensuring the CSI practices are embedded in the organization but also to ensuring there are adequate resources (including people and technology) to support and enable CSI.

9.1.4 CSI register :

It is likely that several initiatives or possibilities for improvement are identified. 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, thus 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.

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.

9.1.5 External and Internal drivers :

There are two major areas within every organization driving improvement: aspects which are external to the organization such as regulation, legislation, competition, external customer requirements, market pressures and economics; and, secondly, aspects which are internal to the organization such as organizational structures, culture, capacity to accept change, existing and projected staffing levels, unions rules, etc. In some cases, these aspects may serve to hinder improvement rather than drive it forward. A SWOT analysis (Strengths, Weaknesses, Opportunities,

Threats), may be helpful in revealing significant opportunities for improvement. The strengths and weaknesses concentrate on the internal aspects of the organization while the opportunities and threats focus on aspects external to the organization.

9.1.6 Service Level management :

Adopting the Service Level Management (SLM) process is a key principle of CSI. While in the past many IT organizations viewed SLM as merely a smattering of isolated agreements around system availability or help desk calls this is no longer true. SLM is no longer optional. Today's business demands that IT be driven by the service model. Today IT is a core enabler of every critical business process. IT can no longer afford to operate as the 'geeks in the basement' but rather must strive to be included in every channel of communication and level of decision making all the way to the boardroom. SLM involves several steps:

- Fully accepting that the IT organization must become a service provider to the business or cease to be relevant.
- Involving the company and to determine their service level requirements.
- Defining the internal portfolio of services: services that are planned, in development, in production. Such a service portfolio also contains modular or component services which will make up a finished service package.
- Defining a customer-facing Service Catalogue that details every service and service package offered by IT with options, parameters, and pricing.
- Identifying existing contractual relationships with external suppliers. Verifying that these Underpinning Contracts (UCs) meet the revised business requirements. Renegotiating them, if necessary.
- Utilizing the Service Catalogue as well as with the baseline, negotiate Service Level Agreements (SLAs) with the business.
- Create a Service Improvement Plan (SIP) to continuously monitor and improve the levels of service.

9.1.7 Knowledge Management :

Knowledge Management plays a key role in CSI. Within each service lifecycle phase, data should be captured to enable knowledge gain and an understanding of what is happening, thus enabling wisdom. This is often referred to as the **DIKW (Data, Information, Knowledge, and Wisdom)** model. See **Figure 9.1**. All too often an organization will capture the appropriate data but fail to process the data into information, synthesize the information in knowledge and then combine that knowledge with others to bring us wisdom. Wisdom will lead us to better decisions around improvement.

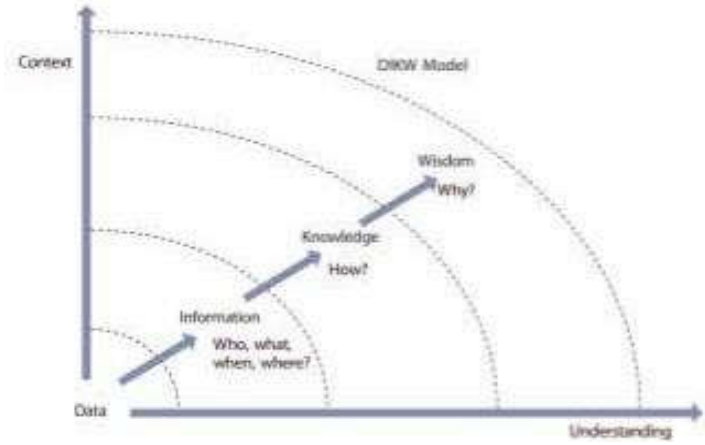

Figure 9.1 Continual Service Improvement Model

9.1.8 The Deming cycle :

W. Edwards Deming is best known for his management philosophy leading to higher quality, increased productivity, and a more competitive position. As part of this philosophy, he formulated 14 points of attention for managers. Some of these points are more appropriate to service management than others. Quality development he proposed the Deming Cycle or Circle. This cycle is particularly applicable in CSI.

The four key stages of the cycle are **Plan, Do, Check and Act**, after which a phase of consolidation prevents the circle from rolling back down the hill. Our goal in using the Deming Cycle is steady, continuous improvement. It is a fundamental tenet of Continual Service Improvement.

The Deming Cycle is critical in two points in CSI: implementation of CSIs, and for the application of CSI to services and service management processes. At implementation, all four stages of the Deming Cycle are used. With ongoing improvement, CSI draws on the check and act stages to monitor, measure, review and implement proposals. The cycle is underpinned by a process-led approach to management where defined processes are in place, the tasks are measured for compliance to expected values and outputs are audited to validate and improve the process.

9.1.9 Service Measurement :

9.1.9.1 Baselines

An important beginning point for highlighting improvement is to establish baselines as markers or starting points for later comparison. Baselines are also used to establish an initial data point to determine if a service or process needs to be improved. Standard values must be established at each level: strategic goals and objectives, tactical process maturity, and operational metrics and KPIs.

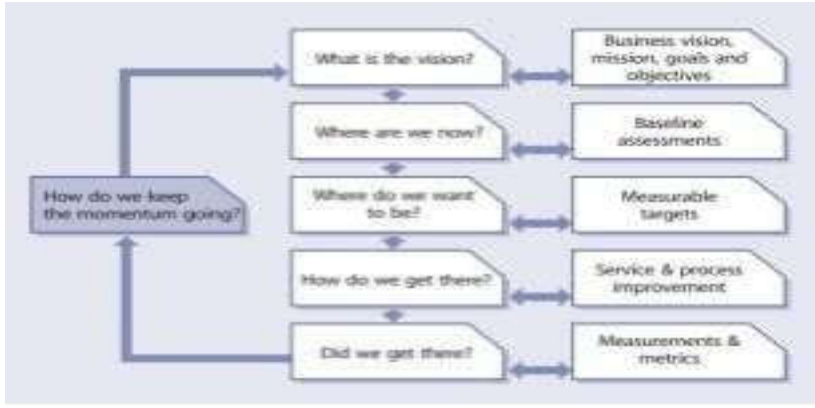

Fig 9.2 Service Management

9.1.9.2 Value to Business

Basically, there are four reasons to monitor and measure:

- **To validate** – monitoring and measuring in order to verify previous decisions.
- **To direct** – monitoring and measuring set to the guidance for activities to meet set targets. It is the most prevalent reason for monitoring and measuring.
- **To justify** – monitoring and measuring to justify, in conjunction with factual evidence or proof, that a course of action is required
- **To intervene** – monitoring and measuring to help 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?' Responding to these questions, it is important to identify which of the above reasons is driving the quantity 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?'

9.1.10 IT governance

Governance has been around the IT stage for decades. The mainframe had significant controls built around its day-today operations. With the advent of distributed processing in the early 90s, then n-tier processing, the internet, and increasing virtualization, governance and controls simply went out of fashion; just when they were the most desperately needed. With the exposure of high-level corporate scams in the early years of this century, IT was thrust, without warning, into acompletely unfamiliargame with incredibly high stakes. Administration is back with a vengeance. IT is now forced to comply with sweeping legislation and an ever-increasing number of external regulations.

9.1.11 Frameworks, Models, Standards, and Quality Systems

9.1.11.1 Frameworks

ITIL, created in 1989, provides detailed guidance on the structure, integration and improvement of IT services and manufacturing processes. It has been updated and revised and is governed by the Office of Government Commerce, UK. It is the most widespread set of principles for IT Service Management worldwide.

COBIT (Control Objectives for Information and related Technology), originally created in 1995 as the information structures audit framework, and has matured to become an overall IT management framework.

COBIT processes and principles are often used by IT and SOX auditors. COBIT is governed by the IT Governance Institute. PMBOK (Project Management Body of Knowledge) is owned and authored by the Project Management Institute (PMI). PRINCE2 (PRojects IN Controlled Environments, v2) is a structured project management method owned by the OGC. Structured project management means managing the project in a logical, organized way following defined steps. A structured project management method is the written description of this logical, organized approach. Individuals can receive qualifications confirming their knowledge of each framework.

Organizations may be assessed against a regulatory framework. In many cases the Capability Maturity Model (CMM) scale is used for these organizational assessments.

9.1.11.2 CMMI (Capability Maturity Model Integration):

Created by SEI (Software Engineering Institute) at Carnegie Mellon University in 1991. In the beginning CMM was a model for demonstrating the reliability of software development processes in the belief that more mature development processes led to better software. The basic software CMM model has grown and been revised.

CMMI is now the de facto standard for assessing a maturity of any process. Organizations can be assessed against the CMMI model using SCAMPI (Standard CMMI Appraisal Method for Process Improvement).

9.1.11.3 Standards and quality Systems :

Standards exist because a widely recognized governing body, in most cases a governing body with worldwide scope, has agreed on a specific set of principles or protocols and has published them for everyone to use. Standards are usually set by committees working under various trade and international organizations. The most important standards applying to the world of ITSM are:

- **ISO/IEC 20000:2005** promotes the adoption of an integrated process approach to effectively deliver managed services to meet business and customer requirements. An agency to function effectively it must

identify and manage numerous linked activities. Coordinated integration and implementation of the service management processes provides the ongoing control, increased efficiency, and opportunities for continual improvement. (ISO).

- **ISO/IEC 27001:2005** covers all types of organizations and specifies the requirements for establishing, implementing, operating, monitoring, reviewing, maintaining, and improving a documented Information Security Management System within the context of the organization's overall business risks.

- **ISO/IEC 15504** (also known as SPICE – Software Process Improvement and Capability determination) provides a framework for the assessment of process capability. This structure can be used by organizations involved in planning, managing, monitoring, controlling, and improving the acquisition, supply, development, functioning, evolution and support of products and services.

- **ISO/IEC 19770:2006** has been established to enable an organization to prove that it is performing software asset management (SAM) to a standard sufficient to satisfy corporate governance requirements and ensure effective support for IT service management overall. ISO/IEC 19770:2006 is intended to align closely to, and to support, ISO/IEC 20000.

9.1.11.4 Quality Systems :

'Six Sigma' was pioneered at Motorola in 1986 and was originally defined as a metric for measuring defects and improving quality, and a methodology to decrease the defect levels below six standard deviations or six sigma.

The fundamental objective of the Six Sigma methodology is the implementation of a measurement-based strategy that focuses on process improvement and variation reduction through the implementation of Six Sigma improvement projects. This is accomplished using two Six Sigma sub-methodologies: DMAIC and DMADV. The Six Sigma DMAIC process is an enhancement system for existing processes falling below specification and looking for incremental improvement.

The Six Sigma DMADV process (define, measure, analyse, design, verify) is an improvement system used to develop new processes or products at Six Sigma quality levels. It can also be employed if a current process requires more than just a piecemeal improvement. Both Six Sigma processes are executed by individuals who have been certified as Six Sigma Green Belts and Six Sigma Black Belts and are overseen by Six Sigma Master Black Belts.

'Lean manufacturing' or 'lean production' has been pioneered by Toyota in the mid-1980s. It is a quality system built around these five principles:

- Specify value from the standpoint of the end customer.
- Identify all the steps in the value current for each product family, eliminating every step and every action and every practice that does not create value.
- Make the remaining value-creating steps happen in a tight and integrated sequence so the product will flow smoothly toward the customer.
- As flow is introduced, let the customers pull value from the next upstream activity.
- As these steps lead to greater transparency, enabling managers and teams to eliminate further waste, pursue perfection through continual improvement.

9.1.12 CSI inputs and outputs:

Table 9.1 below provides a summary of the major inputs and outputs between each stage of the service lifecycle

Lifecycle stage	CSI inputs (from the lifecycle stages in the first column)	CSI outputs (to the lifecycle stages in the first column)
Service strategy	Vision and mission Service portfolio Policies Strategies and strategic plans Priorities Financial information and budgets Patterns of business activity Achievements against metrics, KPIs and CSFs Improvement opportunities logged in the CSI register	Results of customer and user satisfaction surveys Input to business cases and the service portfolio Feedback on strategies and policies Financial information regarding improvement initiatives for input to budgets Data required for metrics, KPIs and CSFs Service reports Requests for change (RFCs) for implementing improvements
Service design	Service catalogue Service design packages including details of utility and warranty Knowledge and information in the SKMS Achievements against metrics, KPIs and CSFs Design of services, measurements, processes, infrastructure and systems Design for the seven-step improvement process and procedures Improvement opportunities logged in the CSI register	Results of customer and user satisfaction surveys Input to design requirements Data required for metrics, KPIs and CSFs Service reports Feedback on service design packages RFCs for implementing improvements
Service transition	Test reports Change evaluation reports Knowledge and information in the SKMS Achievements against metrics, KPIs and CSFs Improvement opportunities logged in the CSI register	Results of customer and user satisfaction surveys Input to testing requirements Data required for metrics, KPIs and CSFs Input to change evaluation and change advisory board meetings Service reports RFCs for implementing improvements
Service operation	Operational performance data and service records Proposed problem resolutions and proactive measures Knowledge and information in the SKMS Achievements against metrics, KPIs and CSFs	Results of customer and user satisfaction surveys Service reports and dashboards Data required for metrics, KPIs and CSFs RFCs for implementing improvements

Table 9.1 CSI Inputs and Outputs

9.2 CONTINUAL SERVICE IMPROVEMENT (CSI) PROCESS

9.2.1 CSI Process: The seven-step improvement process:-

The seven-step improvement process:-

Fundamental to CSI is the concept of measurement. CSI uses the 7-Step Improvement Process shown in Figure 9.4 It is obvious that all the activities of the improvement process will assist CSI in some way. It is relatively simple to identify what takes places, but the difficulty lies in understanding exactly how this will happen. The improvement procedure spans not only the management organization but the entire service lifecycle. This is a cornerstone of CSI.

The 7-Step Improvement Process

1. Define what you should measure: At the onset of the service lifecycle, Service Strategy and Service Design should have identified this information. CSI can then start its cycle all again at 'Where are we now?' This identifies the ideal situation for both the Business and IT.

2. Define what you can measure: This activity related to the CSI activities of 'Where do we want to be?' By identifying the new service level requirements of the business, the IT capabilities and the available budgets, CSI can conduct a gap analysis to identify the opportunities for improvement as well as answering the question 'How do we get there?'

3. Gathering the data: To properly answer the 'Did we get there?' question, data must first be gathered (usually through Service Operations). Data is gathered based on goals and objectives identified. At this point the data is raw and no conclusions are drawn.

4. Processing the data: Here the data is processed in alignment with the CSFs and KPIs specified. This means that timeframes are coordinated, unaligned data is rationalized and made consistent, and deficiencies in data are identified. The simple goal of this step is to process data from multiple disparate sources into an 'apples to apples' comparison.

5. Analysing the data: Here the data becomes information as it is analysed to identify service gaps, trends, and the impact on business. It is the analysing step that is most often overlooked or forgotten in the rush to present data to management.

6. Presenting and using the information: Here the answer to 'Did we get there?' is formatted and communicated in any way necessary to present to the various stakeholders an accurate picture of the results of the improvement efforts.

7. Implementing corrective action: The knowledge gained is used to optimize, improve, and correct services. Managers identify problems and present solutions. The corrective actions that need to be taken to improve

the service are communicated and explained to the organization. Following this step, the organization establishes a new baseline, and cycle begins anew.

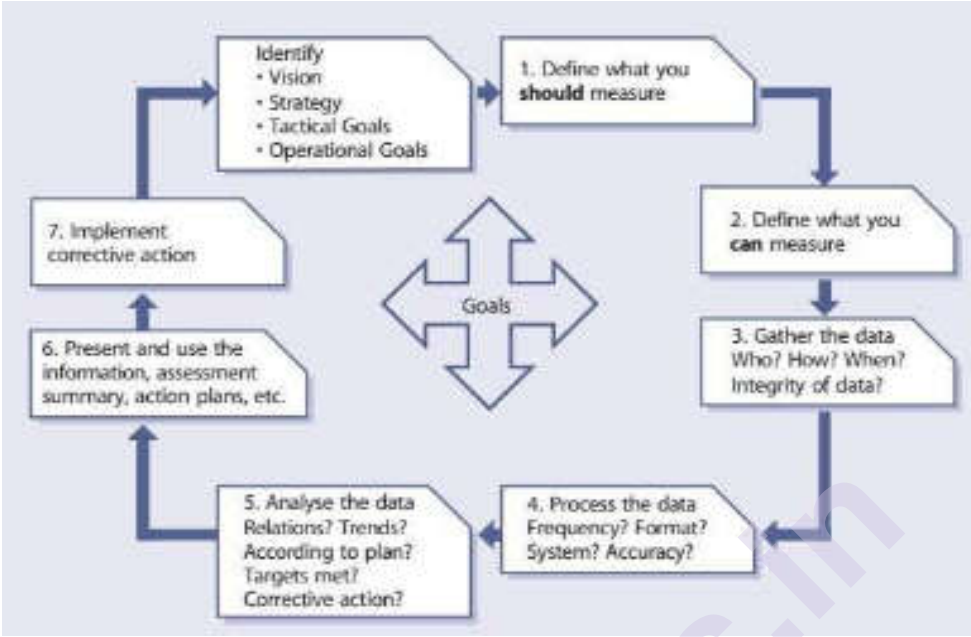

Fig: 9.3 Knowledge Spiral – a gathering activity

9.3 CSI METHODS AND TECHNIQUES

9.3.1 CSI Methods and Techniques:-

A wide variety of methods and techniques can be used in the CSI activities ranging from 'soft and vague' to 'factual and scientific' often providing either both or a mixture of quality and quantity measurement results.

To ensure consistency of execution and the effective measurement, especially for the activities of gathering and processing data, the techniques and methods that are used should be clearly documented in advance and communicated to the staff that will be responsible for their execution.

A goal-oriented attitude, professional experience and education of the individuals are required.

Effort and Cost

CSI improvement activities can require a considerable amount of effort and money for larger-scale projects to improve to minimal time and effort for some incremental improvements. Possible major cost topics are:

Labour cost – Salaries of the organization's staff who are involved in implementing the measurement structure or who spend effort on performing one of the activities in operating or maintaining the measurement framework; including costs associated with managing it. If

(part of) IT is outsourced, outside provider costs should be included here too.

Tooling cost – Purchase, licenses, installation and configuration, maintenance costs of computer hardware, software and other equipment specifically used for the measurement activities.

Training cost – Cost of training and mentoring staff in the use of measurement methods, techniques, tools and procedures.

Expertise cost – Payments to hired experts and consulting firms, typically for the planning, implementation and maintenance activities pertaining to the measurement framework. Includes also out-of-pocket costs of acquiring information used in the measurement framework that is not in the possession of the organization itself such as benchmarking data.

Implementation of the measurement framework, initially and if it changes – In practice these types of costs can be reliably estimated and controlled by using a project-oriented approach.

Operation – The level of costs associated with the operation of the measurement framework is largely fixed because of the way it is designed and equipped.

Maintenance – The level of these types of costs depends mainly on the expected rate at which the measurement framework will require adaptation to changing conditions and on the quality of its implementation.

9.3.1.1 Implementation Review and Evaluation:-

Implementation review and evaluation is key to determining the effectiveness of a CSI improvement programme. Some common areas for review include:

- Were we correct in our evaluation of the current situation and in defining the problem statement?
- When defining the goals for improving IT services did, we commit to the right goals?
- When developing our strategy for improving the use and management of IT services, did we make good decisions and take the right decisions?
- In the new situation, whether we have improved the provision of IT services?
- And finally, what are the lessons learned and ... where are we now? Review and evaluation of a CSI initiative fall within two broad categories:

- Issues closely tied to the original problem situation with respect to the IT service provision to the business and subsequent business aims and strategy for the improvement thereof
- Issues in relation to the planning, implementation and proceedings of the IT improvement in the program itself and associated projects such as measurements, problems, actions and changes.

The issues in the first category are closely related to the characteristics of the original problem situation which instigated the actions for understanding and improvements and will therefore include:

- Ability of IT service to satisfy business needs
- Business satisfaction with the service provision
- Business benefits in the region of productivity, effectiveness, efficiency and economy
- Degree of understanding and supervision of the management of the IT infrastructure and IT service provision on the part of the business.

For the second category the following issues should be reviewed and evaluated:

- Costs of staff involved in the improvement schedule and costs of implementing and maintaining the measurement framework.
- Project management like planning, performance, timeliness of achieving results and milestones, amount of re-planning .
- Communication, information gathering, reporting.

9.3.2 Assessments:-

Assessments are the formal mechanisms for comparing the operational process environment to performance standards for the purpose of measuring improved process capability and/or to identify potential shortcomings that could be addressed. Organizations need to be more than just involved in an assessment; they must be committed to improvement.

The initial step in the assessment process is to choose (or define) the maturity model and in turn the maturity attributes to be measured at each level. A suggested approach is to turn to the best practice frameworks such as CMMI, COBIT, ISO/IEC 20000 or the process maturity framework. These frameworks define maturity models directly or model can be inferred. The frameworks are also useful in the definition of process maturity attributes.

9.3.2.1 When to assess

Assessments can be conducted at any given time. A way to think about assessment timing is in line with the improvement lifecycle:

- **Plan (project initiation)** – Assess the targeted processes at the inception of process introduction to form the basis for a process improvement project. Processes may be of many configurations and design which increases the complexity of assessment data collection.

- **Plan (project midstream)** – A check during process implementation or improvement activities serves as validation that process project objectives are being met and, most importantly, provide tangible evidence that benefits are being achieved from the investment of time, talent, and resources to process initiatives.

- **Do/Check (process in place)** – Upon conclusion of a process project, it is important to validate the maturation of process and the process organization through the efforts of the project team. In addition to serving as a decisive conclusion for a project, planning for periodic reassessments can support overall organizational integration and quality efforts.

9.3.2.2 What to assess and how:-

The assessment's scope is one of the key decisions. Scope should be based on the assessment's objective and anticipated future use of process assessments and assessment reports. There are three potential scope levels:

- **Process only** – Assessment only of process attributes based on the general principles and the guidelines of the process framework which defines the subject process.

- **People, process and technology** – Extend the process assessment to include assessment of the skills, roles and talents of the managers and practitioners of the process as well as the ability of the process-enabling technology deployed to support the objectives and transaction state of the process.

- **Full assessment** – Extend the people, process and technology assessment to include an assessment of the culture of acceptance within the organization, the ability of the organization to articulate a process strategy, the definition of a vision for the process environment as an 'end state', the structure and function of the process organization, the ability of process governance to assure that process objectives and goals are met, the business/IT alignment via a process framework, the effectiveness of process reporting/metrics, and the capability and capacity of decision-making practices to improve processes over time.

Using external resources for assessments	
Pro:	Con:
Objectivity	Cost
Expert ITIL knowledge	Risk of acceptance
Broad exposure to multiple IT organizations	Limited knowledge of existing environments
Analytical skills	Improper preparation affects effectiveness
Credibility	
Minimal impact to operations	
Performing self-assessments	
Pro:	Con:
No expensive consultants	Lack of objectivity (internal agendas)
Self-assessments available for free	Little acceptance of findings
Promotes internal cooperation and communication	Internal politics
Good place to get started	Limited knowledge or skills
Internal knowledge of environment	Resource intensive

Table 9.2:-Assessment Resources

9.3.2.3 Advantages and disadvantages of assessments:-

The advantages include:

- They can provide an objective perspective of the current operational process state compared to a standard maturity model and a process framework. Through a thorough assessment, an accurate determination of any process gaps can be rapidly completed, recommendations put forward and action steps planned.
- Using a common or universally accepted maturity framework, applied to a standard process framework, may serve to support comparing company process maturity to industry benchmarks.

The disadvantages include:

- An assessment provides only a snapshot in time of the process environment. As such it does not reflect current economic activity or cultural dynamics and process operational issues.
- Assessments are labor-intensive efforts. Resources are needed to conduct the assessments beyond those responding such as process or tool practitioners, management, and others.
- Assessments attempt to be as objective as possible in terms of measurements and evaluation factors, but when all is said and done assessment results are still subject to opinion of assessors.

9.3.3 Benchmarking:-

In management, and particularly strategic management, benchmarking is a technique whereby firms assess several facets of their operations in comparison to best practise, typically within their own industry. This then enables businesses to create plans for implementing such best practises, typically with the intention of enhancing some area of performance. It will be necessary to:

- Ensure top management support.
- Take an external view – Bringing together the business intelligence and internal performance to draw conclusions about the way internal resources and processes must be improved to accomplish and surpass the performance of others.
- Involve process owners – Their involvement encourages acceptance and buy-in by those that will be affected immediately by the changes which will be required to improve performance.
- Set up benchmarking teams – As the benchmarking culture develops, people will apply the method as part of the normal way in which they manage their work.
- Acquire the skills – People who commit to benchmarking require a small amount of training and guidance; an experienced in-house facilitator or external consultant will be required to provide technical assurance and encouragement to in the application of the method.

9.3.3.1 BenchmarkingProcedure:-

Identify your problem zones. Because benchmarking can be applied to any business process or function, a range of research techniques may be required. They include:

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

9.3.3.2 Benchmarking is a moderately expensive process, but most organizations find that it more than pays for itself. The three main types of costs are:

Visit costs – This includes travel- and subsistence-related expenses for team members who need to travel to the site.

Time costs – Members of the comparative assessment team will be investing time in researching problems, finding exceptional companies to study, visits and implementation.

Benchmarking database costs – Organizations that institutionalize benchmarking into their daily procedures find it is useful to create and maintain a database of best practices and companies associated with each best practice.

Value of Benchmarking

The results of benchmarking and self-assessments lead to identification of gaps in terms of people, processes, and technologies. A benchmark can be the catalyst to initiating prioritization of where to begin formal process improvement. To summarize, a benchmark is the basis for:

Profiling quality in the market

Boosting self-confidence and pride in employees as well as motivating and tying employees to an organization. This is significant with today's staff shortages in the IT industry – IT personnel want to work in a highly efficient, cutting-edge environment

Trust from customers that the organization is a good IT service management provider.

9.3.3.3 Benefits:-

Using benchmark results will help provide major benefits in:

- Achieving economy in the form of lower prices and higher productivity on the part of the service provider.
- Achieving efficiency by examining 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 in order to identify areas for improvement.
- Achieving efficiency in terms of actual business objectives realized compared with what was planned.
- Benchmarking helps the organization to focus on strategic planning by identifying the relative effectiveness of IT support for the businessTo obtain the maximum benefit, it is necessary to look at all of these three areas, rather than focusing on one to the exclusion of the others.

9.3.3.4 Who is involved?

Within an organization there will be three parties involved in benchmarking:

The customer – that is, the business manager responsible for acquiring IT services to meet business objectives. The customer's interest in benchmarking would be: 'How can I improve my performance in

procuring services and managing a service provider, and in supporting the business through IT services?'

The user or consumer – that is, anyone using IT services to support his or her work. The user's interest in benchmarking would be: 'How can I improve my performance by leveraging IT?'

The internal service provider – providing IT services to users under Service Level Agreements negotiated with and manages the customer. The provider's interest in benchmarking would be: 'How can we improve our performance in the supply of IT services which meet the requirements of our customers and which are cost-effective and timely?'

There will also be participation from external parties:

External service providers – providing IT services to users under contracts and Service Agreements negotiated with and managed by the customer

Members of the public – becoming increasingly direct users of IT services

Benchmarking partners – that is, other organizations with whom comparisons are made to determine best practices to be adopted for improvements.

9.3.3.5 What to benchmark?

Differences in benchmarks between organizations are normal. All organizations and service-provider infrastructures are unique, and most are continually changing. There are also intangible but influential factors that cannot be measured, such as the development, goodwill, image and culture. It is important to understand the size and nature of the business area, including the geographical distribution and the extent to which the service is used for business or time-critical activities. Benchmarking techniques can be applied at various levels from simple in-house comparisons through to an industry-wide search for best practice. Or better yet, let us apply the improvement process to benchmarking.

9.3.3.5.1 What should we measure?

- Select the broad service or a service management process or function to benchmark (such as Service Desk) relative to stakeholder needs.
- Draw up a preliminary list of potential benchmarking partners (these may be within the organization or outside).
- Identify sources of information and methods of collection in order to confirm the suitability of potential partners.

9.3.3.5.2 What can we measure?

- Within that process, define the activities to be benchmarked (such as incident lifecycle).
- Identify the resources required for the study.
- Document the way tasks are currently completed.
- Agree the plan and its implementation.

9.3.3.5.3 Gathering:

- Collect information to identify potential benchmarking partner to contact.

9.3.3.5.4 Analysing:

- Confirm the best potential comparative analysis partner and make a preliminary assessment of the performance gap.
- Establish contacts and visits, if necessary, to validate and substantiate the information.
- Compare the existing process with that of the benchmarking partner to identify differences and innovations.

9.3.3.5.5 Presenting and using:

- Communicate the results of the study throughout the relevant parts of the organization and to the benchmarking partner.
- Plan how to achieve the improvements.

9.3.3.5.6 Taking corrective action:

- Review performance when the changes were embedded in the organization.
- Identify and rectify anything that may have caused the organization to fall short of its target.
- Communicate the results of the desired changes implemented to the organization and the benchmarking partner.
- Consider benchmarking again to continue the improvement process.

9.3.3.6 Benchmark Approach:-

Benchmarking will establish the extent of an organization's existing maturity with best practice and will help in understanding how that organization compares with the industry's norms. Deciding what the KPIs are going to be and then measuring against them will give solid management information for future improvement and targets. A

benchmark exercise would be used as the first stage in this approach. This could be any or other of:

An internal benchmark – completed internally using resources from within the organization to assess the maturity of the service management processes against a reference framework

An external benchmark – an external third-party company would complete this. Most of these have its own proprietary models for the assessment of service management process maturity.

There is a variety of IT for comparative analysis types available separately or in combination, including:

- Cost and performance for internal service providers
- Process performance against industry best practice
- Financial results of high-level IT costs against industry or peers
- Effectiveness considering satisfaction ratings and business alignment at all levels.

9.3.3.7 The context for benchmarking requires information on the organization's profile, complexity, and relative comparators. An effective and meaningful profile contains four key components:

Company information profile – The company profile defines the landscape of an organization, i.e. basic information about company size, industry type, geographic location and types of user are typical of data gathered to establish this profile.

Current assets – The IT assets mix within the company may include production IT, desktop and mobile clients, peripherals, network and server assets.

Current best practices – These include policies, procedures and/or tools that improve returns, and their maturity and degree of usage.

Complexity – Complexity includes information about the end-user community, the types and quantities of varied technologies in use and how IT is managed.

9.3.4 Service Measurement:

Objective:

For services there are three basic measurements that most organizations utilize.

Availability of the service

Reliability of the service

Performance of the service

In many cases when an organization is monitoring, measuring and reporting on component levels they are doing so to protect themselves and possibly to point the blame elsewhere. Service measurement is not about placing blame or protecting oneself but is about providing a meaningful view of the IT service as the customer experiences the service. Service measurement will also require someone to take the individual measurements and combine them to provide a view of the true customer experience. **Figure 9.6** shows how it is possible to measure and report against various levels of systems and components to provide a true service measurement. Even though the figure references availability measure and report the same can apply for performance measuring and reporting.

9.3.4.1 Developing a Service Measurement Framework

A challenge many organizations face is the creation of a Service Measurement Framework that leads to value- added reporting. Setting up a framework is as much an art as a science. An organization may go through some trial and error in the beginning so it should not be afraid to admit mistakes on particular measures or targets and make adjustments to the framework. One of their first steps in developing a Service Measurement Framework is to understand the business processes and to identify those that are most critical to the delivery of value to the business. The IT goals and objectives must support the business goals and targets. Service measurement is not only looking at the past but also the future

- What do we need to be able to do and how can we do things better? The output of any Service Metering Framework should allow individuals to make operational, tactical or strategic decisions. The following steps are key to service measurement.

Origins

- Defining what success looks like. What are we trying to achieve and how will we know when we've achieved it?

Building the framework and choosing measures

- What do we need to measure that will provide us with useful information that allows us to make strategic, tactical and/or operational decisions?
- What measures will provide us with the data and information we need?
- Setting targets for all measures. This may be set by Service Level Agreements or service level targets/objectives that have been agreed internally within IT.

Defining the procedures and policies

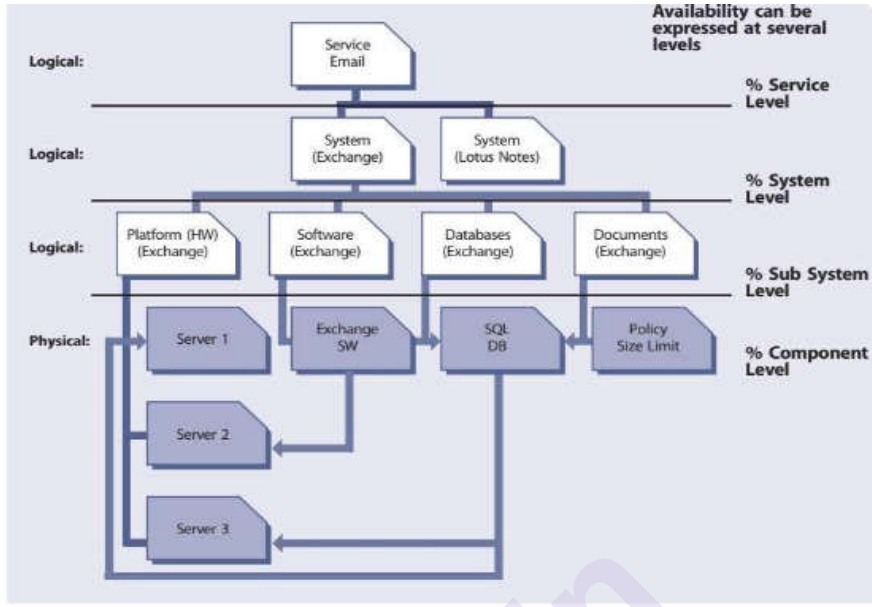

Fig 9.4 Measurement of Services

- Define the procedures for making metrics and determine the tools to be used to support gathering of the data and other measurement activities.
- Identify the roles and responsibilities for service measurement – who will do what?
- Decide the criteria for the continuous improvement initiatives.
- Consider when targets should be raised?

9.3.4.2 Different Levels of Measurement and Reporting:-

Creating a Service Measurement Framework will require the ability to build upon different metrics and measurements. The end result is a view of the way individual component measurements feed the end-to-end service measurement which should be in support of key performance indicators defined for the service.

The service scorecard will then be used to populate an overall Balanced Scorecard or IT scorecard. As shown in **Figure 9.5**there are multiple levels that need to be considered when developing a Service Measurement Framework.

Service Measurement Model

Starting at the bottom, the technology domain areas will be monitoring and reporting on a component basis. This is valuable as each domain area is responsible for ensuring the servers are operating within defined guidelines and objectives. Such measurements will also feed into any

incremental operations improvements and into a more formal CSI initiative.

Defining what to measure

Effective service measures concentrate on a few vital, meaningful indicators that are economical, quantitative, and usable for the desired results. A guiding principle is to measure that which matters most. Defining what to measure is important to ensure that the proper measures are in place to support the following:

Service performance versus strategic business and IT plans – this would be a part of a Balanced Scorecard or IT scorecard.

Risk and compliance with regulations and security requirements for the service – monitoring of security incidents and embedding security requirements in the Service Design and Transition practices.

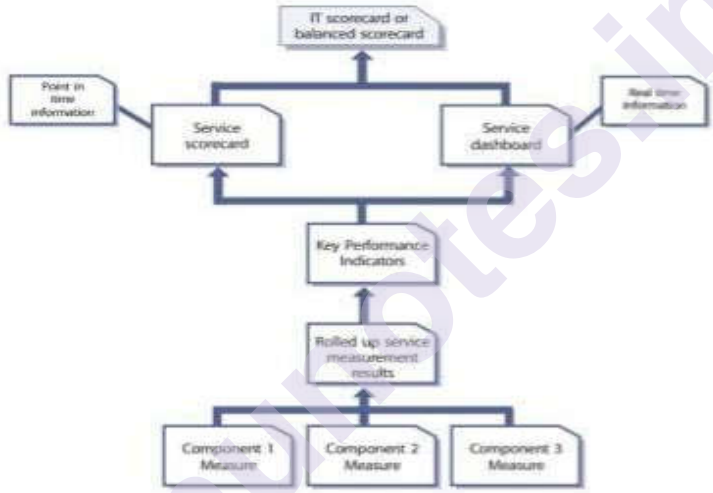

Fig 9.5 Service Measurement Level

- Business contribution including but not limited to financials – how does IT support the company in delivering services. As an example, if your organization is an insurance company the major business services are writing policies and paying claims.
- Key IT processes that support the service – how do availability, capacity and IT service continuity support the service?
- Internal and external customer satisfaction – that measures the customer satisfaction to ensure that the customer's needs are being met.

Service levels:-

This measure will include service, system, component availability, transaction, and response time on components as well as the service,

delivery of the service/application on time and on budget, quality of the service and compliance with any regulatory or safety requirements. Many SLAs at the same time require monitoring and reporting on Incident Management measures such as mean time to repair (MTTR) and mean time to restore a service (MTRS). Other normal measurements will be mean time between system incidents (MTBSI) and mean time between failures (MTBF).

Customer satisfaction

Surveys are conducted on a continual basis to measure and track customer satisfaction. It is common for the Service Desk and Incident Management to conduct a random sampling of client satisfaction on incident tickets.

Business impact

Measure what actions are invoked for any disruption in service that adversely affects the customer's business operation, processes, or its own customers.

Supplier performance

Whenever an organization has entered a supplier relationship where some services or parts of services have been outsourced or co-sourced it is important to measure the performance of the supplier. Each vendor relationship should have defined, quantifiable measures and targets and measurement and reporting should be against the delivery of these measures and targets.

Setting targets

Targets set by management are quantified objectives to be attained. They express the aims of the service or process at every level and provide the basis for the identification of problems and early progress towards solutions and improvement opportunities. Service measurement targets are often defined in response to business demands, or they may result from new policy or regulatory requirements. Service Level Management through Service Level Agreements will often drive the target that is required. With a new service it would be unwise to enter into a Service Level Agreement as long as the overall capabilities are clearly identified. Setting targets is just as important as selecting the right measures. It's important that the targets are realistic but challenging. Good targets will be SMART (specific, measurable, achievable, relevant, and timely). When setting targets, it is important to determine the baseline: that is the starting point from which you will measure improvement.

9.3.4.3 Service Management Process Measurement:-

The same principles applied when measuring the efficiency and effectiveness of a service management process. As the figure below **Figure 9.6** shows you will need to define what to measure at the process activity level. These activity measures should be in support of the course key performance indicators (KPIs).

The KPIs a need to promote higher-level goals. The next level contains the KPIs associated with each process. The activity metrics should feed into and support the KPIs.

The KPIs will provide support to the next level which is the high-level goals such as improving service quality, reducing IT costs or improving customer satisfaction, etc.

Finally, these will feed into an organization's Balanced Scorecard or IT scorecard. When first starting out, be careful to not pick too many KPIs to support the high-level goals. Additional KPIs can always be added later.

9.3.4.4 Service Management Model:-

Creating a measurement framework grid

It is recommended to create a framework grid that will lay out the high-level targets and define which KPIs will support the goal and also which category the KPI addresses. KPI categories can be classified as the following:

- Compliance – are we doing it?
- Quality – how well are we doing it?
- Performance – how fast or slow are we doing it?
- Value – is what we are doing making a difference?

9.3.5 Metrics:

- It is important to remember that there are three types of metrics that an organization will need to collect to support CSI activities as well as other process activities:

- **Technology metrics**:-These metrics are often associated with component and applicationbased metrics such as performance, availability etc.

- **Process metrics: -** These metrics are captured in the form of critical success factors (CSFs), KPIs and activity metrics for the service management processes. They can help determine the overall health of a process. KPIs can help answer four key questions on quality, performance, value, and compliance of following the process. CSI would use these metrics as input in identifying improvement opportunities for each process.

- **Service metrics:-** These metrics are a measure of the end-to-end service performance. Individual technology and process metrics are used when calculating the end-to-end service metrics.

Interpreting and using metrics:-

Results must be examined in context of the objectives, natural environment, and any external factors. Thus, after collecting the results, organizations will conduct measurement reviews to determine how well the indicators worked and how the results contribute to objectives. If they do not, then instead of interpreting results, action should be taken to identify the reasons the results appear the way they do.

Using measurement and metrics

Metrics can be used for several purposes such as to:

Validate – are we support the strategy and vision?

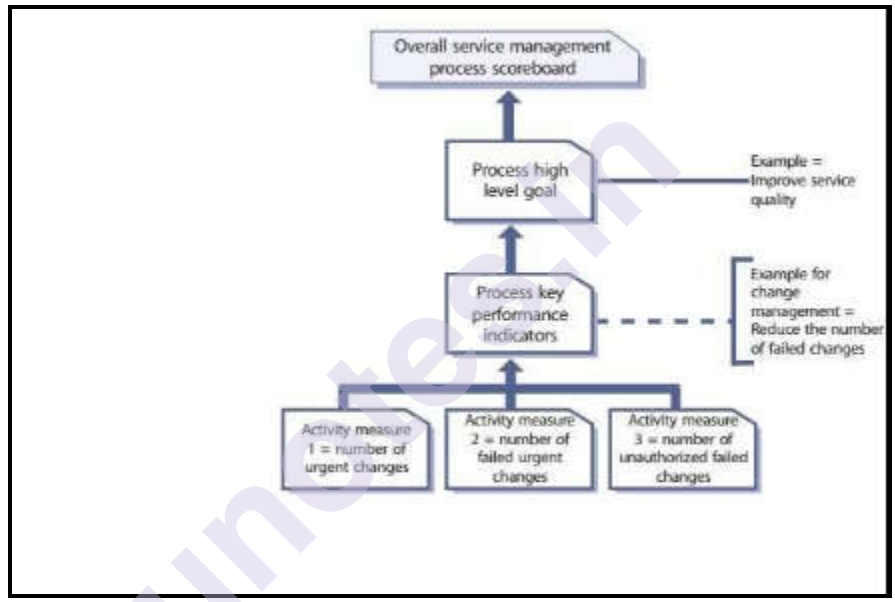

Fig 9.6 Process Activity Level

- **Justify** – do we have the right objectives and metrics?
- **Direct** – based on factual data, people may be guided to change behaviour
- **Intervene** – take corrective actions such as defining improvement opportunities.

Service measurements and metrics should be used to drive decisions. Whichever is being measured the decision could be a strategic, tactical or operational decision. This is the case for CSI. There are many opportunities to improve but there is often only a limited budget to address the improvement opportunities, so decisions must be made.

Using the measurements and metrics can also help define any external factors that may exist outside the control of the internal or external service provider. Individual measurements and actions by themselves may tell an organization very little from a strategic or tactical point of view.

Creating Scorecards and Reports

Service measurement information will be used for three main purposes: to report on the service to interested parties; to compare against targets; and also, to identify improvement opportunities. Reports must be appropriate and useful for all those who use them. There are typically three distinct audiences for reporting purposes.

- The business – is it really focused on supply to time and budget?
- IT management – the administration will be interested in the tactical and strategic outcomes that support the business.
- IT operational/technology managers – these people will be concerned with the tactical and functional metrics which support better planning, coordination and scheduling of resources. The operational managers will be interested in their technology domain measures such as component availability and performance.

Many organizations make the mistake of create and distribute the same report to everyone. This does not offer value for everyone.

Figure 9.7 illustrates how the overall goals and objectives can be used to derive the measurements and metrics needed to support overall goals and objectives. The arrows point both ways since strategy, goals and objectives will drive the identification of required KPIs and measures, but it's also important to remember that the measures are input in KPIs and the KPIs support the goals in balanced Scorecards.

9.3.5.1 Deriving Measurements and Metrics from Goals and Objectives :-

When creating reports, it is important to know their purpose and the details that are required. Reports may be used to provide information for one month, or a comparison of the current month with other months to provide a trend for a certain time period. Reports can show whether service levels are being met or breached. Before starting the design of any report, it is also important to know the following:

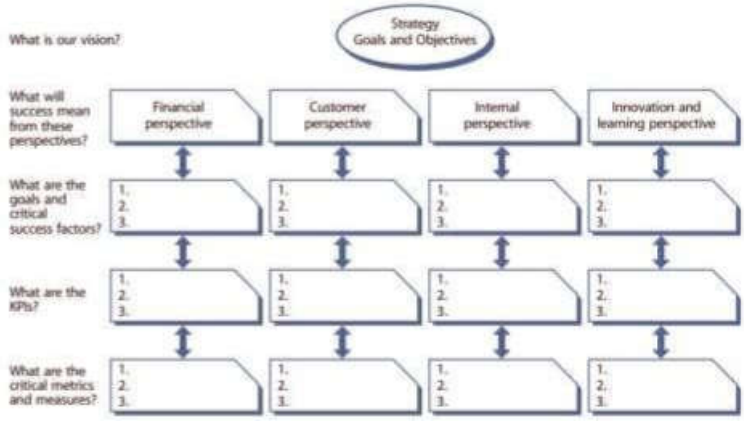

Fig 9.7 Goals and Objectives

- Who is target readers of the report?
- What will the report be used for?
- Who is responsible for creating the report?
- What information is produced, shared, or exchanged? Reports can be set up to show the following:
- Results for a service – that support reports would be the individual measurements on components
- Health of a service management process – this report will have certain process KPI results
- Practical reports – such as telephony reports for the Service Desk.

9.3.6 Return on Investment :-

Few organizations are willing to subsidize the cost and effort associated with process improvement without some quantification of costs and evidence of benefits and outcomes. Unfortunately, going beyond the 'sounds like a good idea' point into quantifiable outcomes presents several challenges. These may include the following:

- There is no true understanding of current IT capabilities or costs.
- There is limited knowledge of entrepreneurial drivers, and their link with IT.
- Viable data is difficult to find in a low-process maturity, data-poor environment.
- Frequently there is limited information of the cost of IT downtime in the business and IT.
- There is limited knowledge of the support at a unit level (e.g. cost of an incident, cost of a Level 2 support visit).
- Compiling a clear and persuasive case for improving the process is difficult.
- Success criteria are inadequately identified, or a way to measure them is not clear.
- A failure to progressively measure and monitor benefits/returns.

The Return-on-Investment challenge needs to take into consideration many factors. On one side is the investment cost. This is the money an organization pays to improve services and services management processes. These costs will be internal resource costs, tool costs, consulting costs, etc. Availability is a good measure to understand the cost of productivity losses, the cost of not being able to complete a business transaction, or the true cost of downtime.

The Business Case should articulate the reason for undertaking a service or process improvement project. As far as possible, data and evidence should be provided relating to the costs and the expected benefits of undertaking process improvement. This could in turn result in worthwhile initiatives not being approved, or revision of the initiative revealing apparent failure when it was successful.

While the initial identification of benefits is an estimate of those likely to be realized by the proposed process improvement initiative, there is also a need to subsequently measure the advantages achieved. These measurements attest to whether the improvement activity achieved the intended outcomes and should consider:

- Whether the planned improvements were realized
- Whether benefits from improvements were achieved
- Whether the target ROI was achieved
- Whether the intended value-added has actually been achieved (VOI)
- Whether the outcomes of the preceding points lead to further process improvement actions being re- evaluated
- Whether adequate time has passed before measuring the benefits. Some benefits will not be immediately apparent; and it is likely that benefits will continue to change over time, as both ongoing costs and continuing benefits continue to move.

9.3.7 Service reporting:-

A significant amount of data is collated and monitored by IT in the daily delivery of quality service to the business; however, only a small subset is of real interest and meaning to the business. The reporting ethos which focuses on the future as strong as it focuses on the past also provides the means for IT to market its wares directly aligned to the positive or negative experiences of the business.

An ideal approach to building a business-focused service-reporting framework is to take the time to define and agree the policy and rules with the business and Service Design about how reporting will be implemented and managed. This includes:

- Targeted audience(s) and the related business views on what the service delivered is
- Agreement on what to measure and what to report on
- Agreed definitions of all terms and boundaries
- Basis of all estimates
- Reporting schedules
- Access to reports and medium to be used
- Meetings planned to review and discuss reports.

Numerous policies and rules can exist as long as it is clear for each report which policies and rules have been applied, e.g. one policy may be applied to production whereas a variant may be more suited to the sales team. However, all policies and rules form part of the single reporting framework.

Targeting appropriately designed reports simply becomes a process of converting flat historical data into useful business views once the structure, standards, and rules are in place (which can be automated). As a result, the intended recipient is provided with precise, unambiguous, and pertinent information that is accessible in the medium of their choice and that describes how IT was delivered into their environment and within their boundaries without being muddled by information about how IT was delivered into other parts of the company. The procedure for reporting services is shown in **Figure 9.8.**

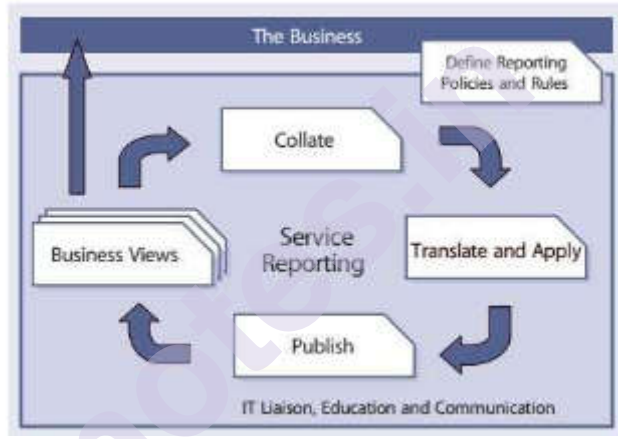

Fig 9.8 Service Reporting

9.3.8 CSI and other service management processes:-

The CSI process makes extensive use of methods and practices found in many ITIL processes throughout the lifecycle of a service. Far from being redundant, the use of the outputs in the form of flows, matrices, statistics or analysis reports provide valuable insight into the service's design and operation.

9.3.8.1 Availability Management:-

Availability Management (AM) plays a key role in helping the IT support organization recognize where they can add value by exploiting technical skills and competencies in an availability context. The data provided by AM is made available to CSI through the Availability Management Information System (AMIS).

Fault Tree Analysis (FTA) is a technique that is used to determine the chain of events that cause a disruption of IT services. This technique offers detailed models of accessibility. When provided to CSI, FTA information indicates which part of the organisation, process or service was responsible in the service disruptions.

Service Failure Analysis (SFA) is a method designed to provide a structured approach to identify end-to-end accessibility improvement opportunities that deliver benefits to the user. CSI and SFA work hand in hand. SFA classifies the business impact of an outage on a service, system or process. This information, combined with business requirements, enables CSI to make proposals about how to address improvement opportunities.

A **Technical Observation (TO)** is a prearranged gathering of specialist technical support staff from within IT support. The TO gathers, processes and analyses information about the situation. Too often the TO is reactive by nature and is assembled hastily to deal with an alternative.

Expanded Incident lifecycle – A technique to help with the technical analysis of Incidents affecting the availability of components and IT services. The Expanded Incident lifecycle is further made up of two parts: time to restore service (aka downtime) and time between failures (aka uptime). There is a diagnosis part to the Incident lifecycle as well as repair, restoration and recovery of the service.

9.3.8.2 Capacity Management:

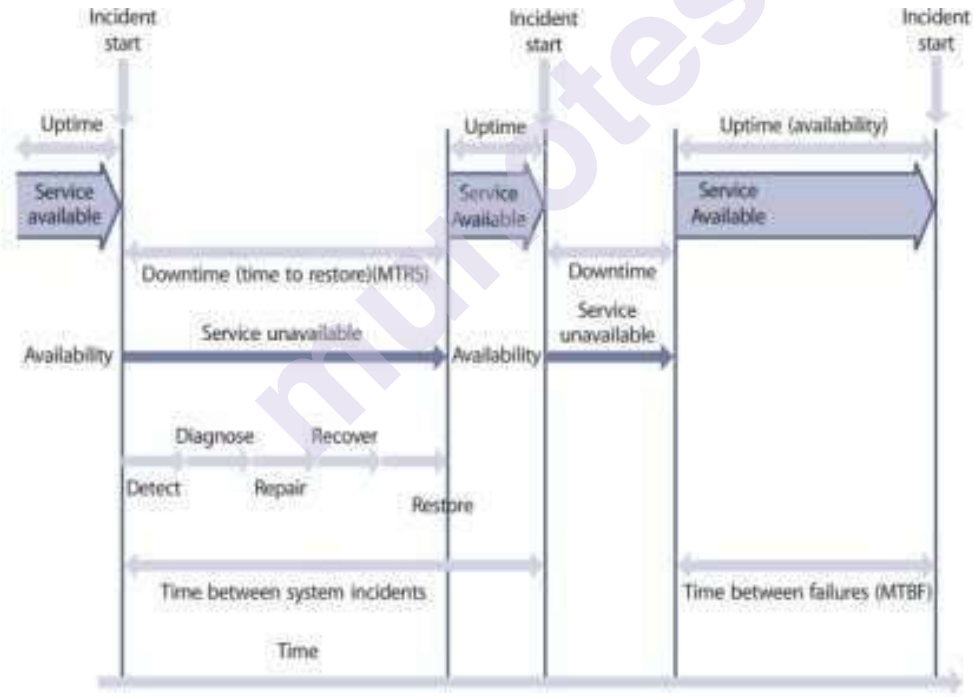

Fig 9.9 Capacity Management

Capacity Management must ensure sufficient hardware, software and personnel resources are in place to support existing and future business capacity and performance requirements. This can be used with either small groups of technical staff or a wider group within a workshop environment.

A prime objective of the **Business Capacity Management** sub-process is to ensure that future business requirements for IT services are considered

and understood, and that sufficient capacity to support the services is planned and implemented in an appropriate timescale. The consequences of changes in the use of services can be estimated based on information and understanding of the performance needs for each service, and steps can be made to guarantee that the necessary service performance can be accomplished.

A prime objective of the **Service Capacity Management** sub-process is to identify and understand the IT services, their use of resource, working patterns, peaks and troughs, as well as to ensure that the services can and do meet their SLA targets.

A prime objective of **Component Capacity Management** sub-process is to identify and understand the capacity and utilization of each of the components of the IT infrastructure.

9.3.8.3 Workload Management can be defined as understanding which customers use what service, when they use the service, how they use the service and finally how using the service impacts the performance of a single or multiple systems and/or components that make up a service.

9.3.8.4 Demand Management is often associated with influencing the end users' behaviour. By influencing the end users' behaviour an organization can change the workload thus improving the performance of components that support IT services.

9.3.8.5 IT Service Continuity Management:

Any CSI initiative to enhance services must also integrate with ITSM since any changes to the infrastructure, service requirements, etc. must be taken into consideration for any adjustments that might be necessary for the continuity plan. Reducing risk to a manageable level and preparing for the restoration of business processes in the event that a risk materializes and a disruption to the business takes place are both parts of the business continuity management process. An **IT business** can better understand the environment in which it operates, choose which risks it wants to mitigate, and take proactive steps to safeguard the interests of all stakeholders by using ITSM to identify, assess, and manage its risks. CSI can support this effort and aid in generating revenue.

The task of **Risk Management** is to ensure that the organization makes cost-effective use of a risk process that has a series of well-defined steps. There are two distinct phases: risk analysis and risk management. Risk analysis involves the identification and assessment of the level (measure) of the risks calculated from the assessed values of assets and the assessed levels of threats to, and vulnerabilities of, those assets.

9.3.8.6 Problem Management:

CSI and Problem Management are closely related because one of the objectives of Problem Management is to locate and permanently fix faults that affect infrastructure services. This directly aids CSI initiatives to find

and implement service improvement measures. Through trend monitoring and the targeted application of preventive action, problem management additionally complements CSI operations. Any PIR on changes made to a service in order to improve it must include CSI.

9.3.8.7 Change, Release and Deployment Management :

All CSI activities will fall under the scope of Change, Release and Deployment Management. CSI's goal is to identify and implement improvement activities on IT services that support the business processes as well as identify and implement improvements to ITSM processes.

9.3.8.8 Knowledge Management:

Knowledge Management is one of the core areas that supports CSI. Knowledge gathering, organisation, quality assessment, and application are all significant contributions to CSI operations. For identifying trends in Service Level Achievements and/or outcomes and output of facility management procedures, an organisation must collect information and analyse what the results are. This information is used to decide which service improvement initiatives to focus on. Successful knowledge management requires two key elements:

An **open culture** where knowledge, both best practices and lessons learned is shared across the organization and people are rewarded for it.

The **infrastructure** – a culture may be open to knowledge sharing, but without the means or infrastructure to support it, even the best intentions can be compromised, and over time this serves as a demotivator, quelling the behaviour.

9.4 ORGANISING FOR CONTINUAL SERVICE IMPROVEMENT (CSI)

9.4.1 Organisational development:-

CSI activities will be successful if specific roles and responsibilities are properly identified. As with many roles, these may or may not be a full-time position, however, itis important that roles are identified at the outset of any CSI initiative.

9.4.1.1 Define what you should measure Roles:

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. Example titles: Service Manager, Service Owner, Service Level Manager, CSI Manager, Process Owner, process managers, customers, business/IT analysts and senior IT managers.

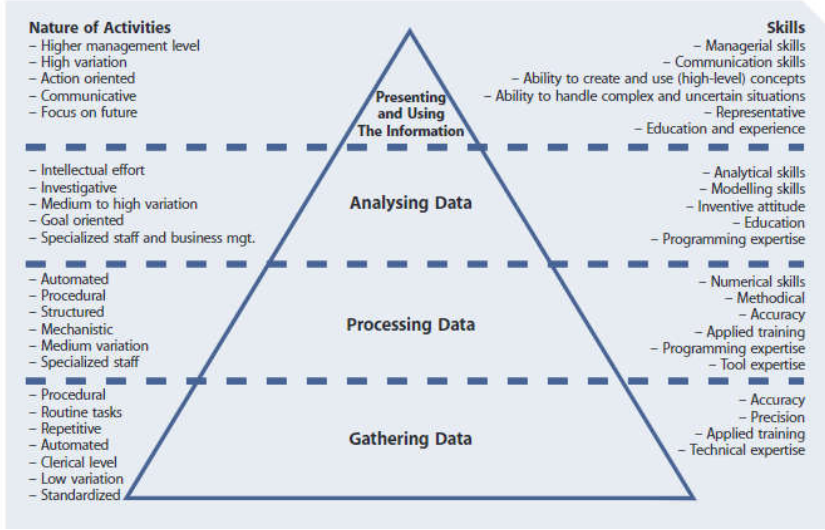

Fig: 9.10 Activities and Skills levels needed for CSI.

9.4.1.2 Roles involved in the 'define what you *should* measure' activity.

Roles: 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.

Example titles: Service Manager, Service Owner, Service Level Manager, CSI Manager, Process Owner, process managers, customers, business/IT analysts and senior IT managers.

9.4.1.3 Roles involved in the 'define what you *can* measure' activity.

Roles: Individuals involved with providing the service (internal and external providers) who understand the capabilities of the measuring processes, procedures, tools and staff.

Example titles: Service Manager, Service Owner, Process Owner, process managers, internal and external providers.

9.4.1.4 Roles involved in the '*gather*ing the data' activity.

Roles: Individuals involved in day-to-day process activities within the Service Transition and Service Operation lifecycle phases.

Example titles: Service desk staff, technical management staff, application management staff, IT security staff.

9.4.1.5 Roles involved in the '*process*ing the data' activity.

Roles: Individuals involved in day-to-day process activities within the Service Transition and Service Operation lifecycle phases.

Example titles: Service desk staff, technical management staff, application management staff, IT security staff. Analysing the data

9.4.1.6 Roles involved in the '*analyz*ing the data' activity.

Roles: Individuals involved with providing the service (internal and external providers) who understand the capabilities of the measuring processes, procedures, tools and staff.

Example titles: Service Owner, Process Owner, process managers, business/IT analysts, senior IT analysts, supervisors and team leaders.

9.4.1.7 Roles involved in the '*present*ing and using the information' activity.

Roles: 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. Key personnel involved with decision making from both IT and the business.

Example titles: CSI Manager, Service Owner, Service Manager, Service Level Manager, Process Owner, process managers, customers, business/IT analysts, senior IT managers, internal and external providers.

9.4.1.8 Roles involved in the '*implement*ing corrective action' activity.

Roles: Individuals involved with providing the service (internal and external providers).

Example titles: CSI Manager, Service Owner, Service Manager, Service Level Manager, Process Owner, process managers, customers, business/IT analysts, senior IT managers, internal and external providers.

9.4.2 Functions, roles:-

9.4.2.1 Service Manager:

Service Manager is an important role that manages the development, implementation, evaluation and on-going management of new and existing products and services. Responsibilities include business strategy development, competitive market assessment/benchmarking, financial and internal customer analysis, vendor management, inventory management, internal supplier management, cost management, delivery and full lifecycle management of products and/or services. Service Managers are responsible for managing very complex projects in order to achieve objectives and strategies and strive for global leadership in the marketplace. In order to attain this goal, they must evaluate new market opportunities, operating models, technologies and the emerging needs of customers in a company with international scope.

At this level, Service Managers are recognized as global product/service experts. They drive the decision-making processes, manage product/service objectives and strategies, hold internal and external suppliers accountable via formal agreements, and provide the integration of individual product plans and new technologies into a seamless customer-focused services. Service Managers may also be required to

coach other managers (Service Owners, Process Owners) with differing levels of expertise for managing a business function or a particular product/service, within a specified product/service family.

Key Responsibilities

- Provide leadership on the development of the Business Case and product line strategy and architecture, new service deployment and lifecycle management schedules.
- Perform service cost management activities in close partnership with other organizations such as operations, engineering, and finance. Many of these organizations are held to strict internal supplier agreements.
- Manage various and sometimes conflicting objectives to achieve the organization's goals and financial commitments.
- Instil a market focus.
- Create an imaginative organization which encourages high performance and innovative contributions from its members within a rapidly changing environment.

Service Managers are able to effectively communicate product/service line strategies to corporate business leaders, and develop partnerships with other organizations within the company with both similar and dissimilar objectives and also with suppliers in order to satisfy internal and external customer needs. This is most often achieved via formalized agreement for both internal and external suppliers.

They must be able to formulate development programmes in response to new market opportunities, assess the impact of new technologies and guide creation of innovative solutions to bring best-in-breed solutions to our internal and external customers. They market the development and implementation of products/services that incorporate new technologies or system development. This requires extensive cross-organization communications. They also can identify, develop and implement financial improvement opportunities in order to meet the firm's commitments.

Key Skills and Competencies

- Previous product/market management experience
- Working knowledge of market analysis techniques and marketing programmes
- Advanced degree or equivalent experience
- Working knowledge of the domestic and international marketplace including industry applications, needs/trends, competitive vendor offerings, outsourcing, licensing, vendor management and customer relationships.

- Product knowledge must include complex engineering, telecommunications, and data protocols, as well as data processing applications and the ability to analyse the impact of new technologies.
- Demonstrated sustained performance in previous assignments
- Sound business judgment
- Negotiating skills
- Human resource management skills
- Excellent communications skills
- Accept challenges and manage risk effectively and innovatively
- Produce solutions on time within cost objectives.

9.4.2.2 CSI Manager:

This new role is essential for a successful improvement programme. The CSI owner is ultimately responsible for the success of all improvement activities. This single point of accountability coupled with competence and authority virtually guarantees a successful improvement programme.

Key Responsibilities

- Responsible for development of the CSI domain
- Responsible for communicating the vision of CSI across the IT organization.
- Ensures that CSI roles have been filled.
- Works with the Service Owner to identify and prioritize improvement opportunities.
- Works with the Service Level Manager to ensure that monitoring requirements are defined.
- Works with the Service Level Manager to identity service improvement plans
- Ensures that monitoring tools are in place to gather data.
- Ensures that baseline data is captured to measure improvement against it.
- Defines and reports on CSI CSFs, KPIs and CSI activity metrics.
- Identifies other frameworks, models and standards that will support CSI activities.
- Ensures that Knowledge Management is an integral part of the day-to-day operations.

- Ensures that CSI activities are coordinated throughout the service lifecycle.
- Reviews analysed data.
- Presents recommendations to senior management for improvement.
- Helps prioritize improvement opportunities.
- Lead, manage and deliver cross-functional and cross divisional improvement projects.
- Build effective relationships with the business and IT senior managers.
- Identify and deliver process improvements in critical business areas across manufacturing and relevant divisions.
- Set direction and provide framework through which improvement objectives can be delivered.
- Coach, mentor and support fellow service improvement professionals.
- Possess the ability to positively influence all levels of management to ensure that service improvement activities are receiving the necessary support and are resourced sufficiently to implement solutions.

9.4.2.3 Service Owner

The Service Owner is accountable for a specific service within an organization regardless of where the underpinning technology components, processes or professional capabilities reside. Service ownership is as critical to service management as establishing ownership for processes which cross multiple vertical silos or departments.

Key Responsibilities

- Service Owner for a specified service
- Provides input in service attributes such as performance, availability etc.
- Represents the service across the organization.
- Understands the service (components etc.)
- Point of escalation (notification) for major Incidents
- Represents the service in Change Advisory Board meetings.
- Provides input in CSI.
- Participates in internal service review meetings (within IT)
- Works with the CSI Manager to identify and prioritize service improvement.

- Participates in external service review meetings (with the business)
- Responsible for ensuring that the service entry in the Service Catalogue is accurate and is maintained.
- Participates in negotiating SLAs and OLAs.

To ensure that a service is managed with a business focus, the definition of a single point of accountability is essential to provide the level of attention and focus required for its delivery.

The Service Owner is responsible for continual improvement and the management of change affecting the services under their care. The Service Owner is a primary stakeholder in all of the underlying IT processes which enable or support the service they own. For example:

- **Incident Management** - Involved in or perhaps chairs the crisis management team for high-priority incidents impacting the service owned
- **Problem Management** - Plays a major role in establishing the root cause and proposed permanent fix for the service being evaluated
- **Release and Deployment Management** - Is a key stakeholder in determining whether a new release affecting a service in production is ready for promotion
- **Change Management** - Participates in Change Advisory Board decisions, approving changes to the services they own
- **Asset and Configuration Management** - Ensures that all groups which maintain the data and relationships for the service architecture they are responsible for have done so with the level of integrity required
- **Service Level Management** - Acts as the single point of contact for a specific service and ensures that the Service Portfolio and Service Catalogue are accurate in relationship to their service
- **Availability and Capacity Management** - Reviews technical monitoring data from a domain perspective to ensure that the needs of the overall service are being met
- **IT Service Continuity Management** - Understands and is responsible for ensuring that all elements required to restore their service are known and in place in the event of a crisis
- **IT Financial Management** - Assists in defining and tracking the cost models in relationship to how their service is costed and recovered.

P = Primary Responsibility S = Secondary Responsibility	CSI Manager	Service Level Manager	Service Owner
Focus			
IT services	S	P	P
IT systems	S		P
Processes	P	S	S
Customers	S	P	S
Technology	P	S	P
Responsible For:			
development and maintenance of the catalogue of existing services		P	S
developing and maintaining OLAs		P	S
gathering Service Level Requirements from the customer	S	P	S
negotiating and maintaining SLAs with the Customer	S	P	S
understanding UCs as they relate to OLAs and SLAs	S	P	S
ensuring appropriate service level monitoring is in place	P	P	S
producing, reviewing and evaluating reports on service performance and achievements on a regular basis	P	P	P
conducting meetings with the customer on a regular basis to discuss service level performance and improvement	S	P	S

conducting yearly SLA review meetings with the customer	S	P	S
ensuring customer satisfaction with the use of a customer satisfaction survey	S	P	S
initiating appropriate actions to improve service levels (SIP)	P	P	P
the negotiation and agreement of OLAs and SLAs	P	P	S
ensuring the management of underpinning contracts as they relate to OLAs and SLAs	S	P	S
working with the Service Level Manager to provide services to meet the customer's requirements	P		P
appropriate monitoring of services or systems	P	P	P
producing, reviewing and evaluating reports on service or system performance and achievement to the Service Level Manager and the Service Level Process Manager	P	P	P
Assisting in appropriate actions to improve service levels (SIP)	P	P	P
Skills, knowledge and competencies			
relationshlp management skills	P	P	P
A good understanding of IT services and qualifying factors in order to understand how customer requirements will affect delivery	P	P	P
An understanding of the customer's business and how IT contributes to the delivery of that product or service	P	P	P

Good communication skills	P	P	P
Good negotiation skills	P	P	P
Knowledge and experience of contract and/or supplier management roles	S	P	S
Good people management and meeting facilitating skills	P	P	P
Good understanding of statistical and analytical principles and processes	P	S	S
Good presentation skills	P	P	S
Good technical understanding and an ability to translate technical requirements and specifications into easily understood business concepts and vice versa	S	P	S
Innovative in respect of service quality and ways in which it can be improved within the bounds of the organization's limits (resource, budgetary, legal etc.)	P	P	P
Good organizational and planning skills	P	P	P
Good vendor management skills	S	P	S

Table showing Comparison of CSI Manager, Service Level Manager and Service Owner

9.4.2.4 Process Owner:

The initial planning phase of any ITIL project must include establishing the role of Process Owner. This key role is 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.

The Process Owner performs the essential role of process champion, design lead, advocate, coach and protector. Typically, a Process Owner should be a senior level manager with credibility, influence and authority across the various areas impacted by the activities of the process. The

Process Owner is required to have the ability to influence and ensure compliance to the policies and procedures put in place across the cultural and departmental silos of the IT organization.

9.4.2.5 Reporting analyst:

The reporting analyst is a key role for CSI and will often work in concert with the Service Level Management roles. The reporting analyst reviews and analyses data from components, systems and sub-systems in order to obtain a true end-to-end service achievement. The reporting analyst will also identify trends and establish if the trends are positive or negative trends. This information is then used in the presenting of the data.

Key responsibilities

- Participating in CSI meetings and Service Level Management meetings to ensure the validity of the reporting metrics, notification thresholds and overall solution.
- Responsible for consolidating data from multiple sources.
- Responsible for producing trends and provides feedback on the trends such as whether the trends are positive or negative, what their impact is likely to be, and if the trends are predictable for the future.
- Responsible for producing reports on service or system performance based on the negotiated OLAs and SLAs and improvement initiatives.

Key Skills and Competencies

- Good understanding of statistical and analytical principles and processes
- Strong technical foundation in the reporting tool(s)
- Good communication skills
- Good technical understanding and an ability to translate technical requirements and specifications into easily understood reporting requirements.

9.4.3 Customer Engagement:-

These new roles are the embodiment of the concepts of a service-oriented organization. To run a traditional IT organization focusing on technical excellence, these roles will seem extraneous. To run a forward-thinking, service-oriented IT partner to the business, these roles are crucial. Improvement will not happen by itself. It requires a structured programme and mature processes. The roles shown below are responsible for that programme.

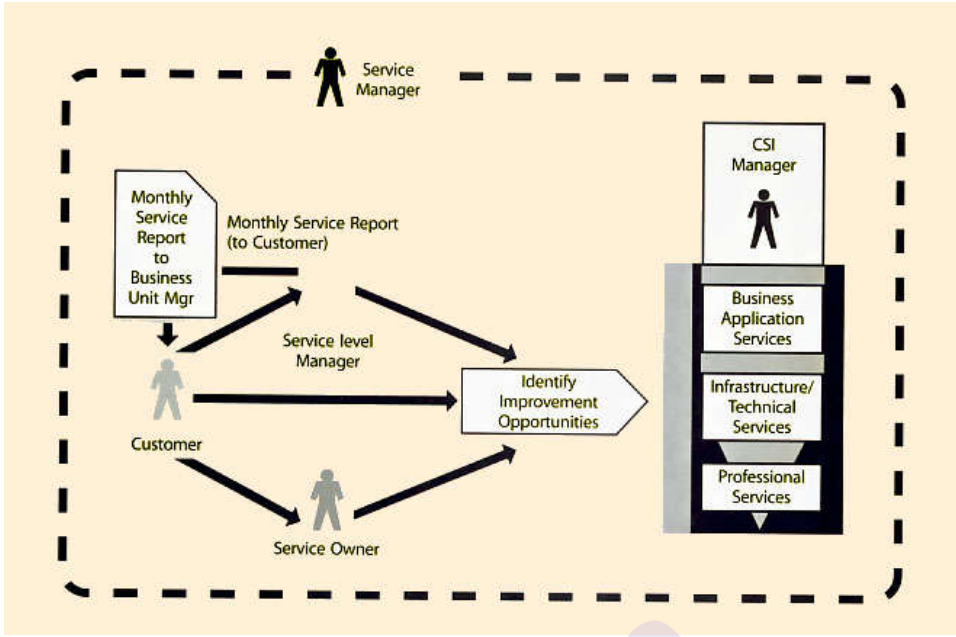

Fig 9.11 Customer Engagement

9.4.4 Responsibility model - RACI:-

ITIL utilizes the **RACI** model as a generic tool for reviewing and assigning four key roles to any important task or activity. Whereas role assignments are often well-defined within **functions**, the **RACI** model holds value for ensuring that roles are appropriately filled or covered within **processes.**

- Those in the **R = RESPONSIBLE** role for a given activity are charged with executing or performing the activity or task.
- The single entity in the **A = ACCOUNTABLE** role owns the task or activity and must respond for its outcomes. *Only one party can be responsible for a given task/activity.*
- Those in the **C = CONSULTED** role review and provide assistance and authorization around the task or activity.
- Those in the **I = INFORMED** role receives updates as the job or activity progresses.

The table below provides a sample of how **RACI** might be used to assign roles to a series of tasks associated with an application development project. Note that all rows have one and only one ACCOUNTABLE and at least one RESPONSIBLE.

To build a RACI chart, the following steps should be followed:

- Identify the individual processes activities
- Identify and define the roles within the process.
- Conduct meetings with stakeholders and assign the RACI codes.

- Identify any gaps or overlaps – for example, where there is multiple A's or no R's

Task	Application Developer	Application Owner	Business Representative	Business Analyst
Draft Requirements		A	C	R
Validate Requirements	R	A	R	R
Create Logical Design	R	C	I	R
Create Data Design	A/R	I		R
Validate Design		A/R	C	R

Fig 9.12Using RACI model to assign roles

- Distribute the chart and incorporate feedback.
- Ensure that the allocations are being followed.

Analysis of a RACI chart to identify weaknesses or areas for improvement should include considering both the role and activity perspectives.

Potential problems with the RACI model:

- Having more than one person accountable for a process means that in practice no one is accountable
- Delegation of responsibility or accountability without necessary authority
- Focus on matching processes and activities with departments will lead to confusion as the focus should be on roles.
- Incorrect division/combination of functions; conflicting agendas or goals

9.4.5 Competenceand training:-

Delivering service successfully depends on personnel involved in service management having the appropriate education, training, skills and experience. People need to understand their role and how they contribute to the overall organization, services and processes to be effective and motivated. As changes are made, job requirements, roles, responsibilities and competencies should be updated if necessary. Each service lifecycle stage depends on appropriate skills and experience of people and their knowledge to make key decisions.

many organizations, personnel will deliver tasks appropriate to more than one lifecycle stage. They may well find themselves allocated (fully or partially) from operational tasks to support a design exercise and then follow that service through service transition. They may then, via early life support activities, move into support of the new or changed services that they have been involved in designing and implementing into the live environment. The specific roles within ITIL service management all

require specific skills, attributes and competences from the people involved to enable them to work effectively and efficiently. However, whatever the role, it is imperative that the person carrying out that role has the following attributes:

- Awareness of the business priorities, objectives, and business drivers
- Awareness of the role IT plays in enabling the business objectives to be met.
- Customer service skills
- Awareness of what IT can deliver to the business, including latest capabilities.
- The competence, knowledge, and information necessary to complete their role.
- The ability to use, understand and interpret the best practice, policies, and procedures to ensure adherence.

9.5 SUMMARY

In a nutshell, the Continual Service Improvement (CSI) process uses methods from quality management to learn from past successes and failures.Here we will cover everything about the processes in continual service improvement, the managerial and supervisory aspects and more. By the end, you will be able to:

- Understand and describe the knowledge, interpretation, and analysis of improvement principles, techniques, and relationships, and their application to ensure continual service improvement.
- Know what the seven-step improvement process is, how each step can be applied, and the benefits produced.
- Know how CSI integrates with the other stages in the ITIL Service Lifecycle
- Understand how other processes play key roles in the seven-step improvement process.

9.6 QUESTIONS

1. What methods and techniques can be used in CSI activities?
2. Explain how assessment plays a key role in CSI activities.
3. Write a brief note on Gap Analysis.
4. Explain benchmarking in CSI with respect to its procedure, cost and value to the organization.

5. Explain steps in benchmarking techniques and the approach used for benchmarking.
6. What is the objective of service measurement? What is the key to service measurement?
7. Explain the importance of scorecards and reports in service measurement.
8. Write a brief note on:

   a. Service Reporting

   b. Return on Investment
9. Explain the role of Availability Management in CSI.
10. Explain the role of Capacity Management in CSI.
11. Explain the RACI model.
12. Explain the types of metrics that are used by an organization to support CSI activities.
13. Explain the 7-step improvement process.
14. List and explain the different levels of management and reporting.
15. Explain the Continual Service methods and techniques which can be used to perform and interpret CSI initiatives.
16. Distinguish between process and service owner.
17. Write a short note on authority matrix.
18. List and explain the primary responsibilities of CSI manager.
19. Define the various roles for processing and analysing the data.
20. Write a short note on the CSI inputs and outputs for the various stages.
21. Write a short note on CSI register.

9.7 REFERENCES

- ITIL v3 Foundation Complete Certification Kit
- ITIL v3 Service Strategy
- ITIL v3 Service Design
- ITIL v3 Service Transition
- ITIL v3 Service Operation
- ITIL v3 Continual Service Improvement

10

ORGANISING FOR CSI, TECHNOLOGY CONSIDERATIONS AND IMPLEMENTING CSI

Unit Structure:

10.0 Objectives

10.1 Tools to Support CSI Activities

10.2 Critical Consideration for Implementing CSI

10.3 Governance

10.4 CSI and Organizational Change

10.5 Communication and Strategy Plan

10.6 Summary

10.7 Questions

10.8 References

10.0 OBJECTIVES

- CSI activities will require software tools to support tracking and reporting on IT services as well as to underpin the ITSM processes.
- These tools will be used for data gathering, supervision, analysis, reporting for services and will also assist in determining the efficiency and effectiveness of IT service control processes.
- From a process perspective the use of tools enables centralizing of key processes and automation and integration of core service management processes.
- The raw data collected in the databases can be analyzed resulting in the identification of trends.
- Preventive measures can then be implemented thus increasing stability, reliability, and availability of the IT infrastructure.

10.1 TOOLS TO SUPPORT CSI ACTIVITIES

As part of the assessment of 'Where do we want to be?' the requirements for enhancing tools need to be addressed and documented. Necessity and sophistication of the tools required depend on the business need for IT services and, to some extent, the size of the organization. These tools can

be defined into broad categories that support and comment on various aspects of the systems and service management domains:

IT Service Management Suites

The success of ITIL within the industry has encouraged software vendors to provide tools and suites of tools that are highly compatible with the ITIL process framework providing significant levels of integration between the processes and their associated record types. This feature creates a rich source of data and creates many of the inputs to CSI including:

- **Incidents** that capture the service or the Configuration Item (CI) affected are a prime input to CSI enabling the understanding of the issues that are affecting the overall service provision and related support activities. Incident that matched the functionality allows the Service Desk to quickly relate like issues and to create the master records that highlight common situations that are affecting the users with associated resolution data to enhance problem identification and reduce the mean time to restore service (MTRS).

- **Problems** are defined with integrated links to the associated incidents that confirmed their existence. Using the configuration data from the CMS to understand the relationships, Managing Issues now has a source of related data to enable the Root Cause Analysis process including change and Release history of the affected CI or service.

- **Changes** are often the first area of investigation following a service failure, again using the integration capabilities of the ITSM tool suite; it can be easier to trace changes made to a service or a CI.

The CMS is the foundation for the integration of all ITSM tool functionality and is a critical data source for the CSI mission. While the service provider must still define the overall Configuration Management process and create the data model that is associated with their specific environment, the tools to establish and manage the CMS and the overall service delivery architecture have become enormously powerful.

Systems and Network Management

These tools are typically specific to technology platforms that are under management and are used to administer the various domains but can provide a wide variety of data supporting of the service management mission. These tools generate error messages for event management and correlation that feed the Incident Management and Availability Management processes.

Many of these tools also support technology proprietary methods for software deployment within their domains and, as such, can provide metric data in support of CSI alterations and Release Management and dynamic updates to the CMS.

Event Management

Events are status messages generated from the systems, network, and application management platforms. These events are created when one of the above tools senses a threshold has been met or an error condition is discovered. The major issue with this capability is the significant volume of messages that are created from both the actual event and the up- and down-stream impact which can be difficult to determine the real issue. Events are captured and assessed by rules-based, model-based and policy-based correlation technologies that can interpret a sequence of events and derive, isolate and report on the true cause and impact.

Automated Incident/Problem Resolution

There are many products in the marketplace which support the automation of the traditional manual, labour-intensive and error-prone process of incident and problem discovery and resolution. Utilizing data from proactive detection monitors, any component or service outage generates an alert that automatically triggers diagnosis and repair procedures. These procedures then identify the root cause and fix the problem using pre-programmed and scripted self-healing techniques reducing the MTRS of many common causes of incidents and in some cases preventing service outages completely.

Knowledge Management

There are specialist tools available that support and streamline the discipline of Knowledge Management. Providing efficient and accurate access to previous cases with proven resolution data, these tools address the symptoms associated with the current incident or problem. KM tools also generate significant metrics designed to measure the improvement process itself.

Key CSI data adds transparency to incident recurrence and frequency, utilization rates, the effectiveness of your stored resolutions and the impact KM has on the efficacy of the overall support function.

Service Request and Fulfilment

There are specialized tools that deal with Service Catalogue definition, request management and the workflow associated with the fulfilment of these requests. Some of these tools provide the workflow engines and some rely heavily on the capabilities of the companion ITSM suite. These tools provide the technology required to define the services within a catalogue structure in conjunction with the business customers and create a service portal (normally web-based) that allows users to request services. These tools typically also capture related cost data to be fed to the financial systems for later charging activities.

Performance Management

Performance management tools allow for the collection of availability, capacity, and performance data from a multitude of domains and platforms

within the IT infrastructure environment. This data is used to populate the Availability and Capacity Management Information Systems (AMIS and CMIS) giving IT organizations a historical, current and prospective view of performance, resource and service usage for offline analysis and modelling activities. Capabilities of these tools include:

- Analysis of responsiveness, transaction and traffic throughput and utilization levels supporting the balancing of resources to optimize performance of the IT services
- Workload assessment with predictive trend analysis of future growth and required capacity for each of the IT services being provided.
- Predictive performance technology enabling the evaluation of tuning alternatives for systems, networks, databases, and applications that support modelling of the expected outcomes
- Generation of the data required to submit a report on SLAs and provide input to service Improvement plans.

Application and Service Performance Monitoring

There has always been a challenge related to understanding the true user experience related to service provision. Recognizing this need, many vendors provide tools that monitor the end-to-end delivery of essential services, using either active or passive technologies, to fully instrument and probe the many components of the service delivery chain. The software provides key metrics such as availability, transaction throughput, transaction response time, network latency, server efficiency, database I/O and SQL effectiveness. Usage trending data is vital for the Availability and Capacity Management processes providing the information required to assess current performance and plan for future growth.

Statistical Analysis Tools

Most of the tools that are available to support the service management and systems management environments provide reporting capabilities, but this is typically not enough to support robust Availability and Capacity Management capabilities. Raw data from many of the above tools needs to be captured into a single repository for collective analysis. This is the data that will provide input to the Availability and Capacity processes and support the analysis of MTRS, MTBFs, SFA, Demand Management, workload analysis, service modelling, application sizing and their related opportunities for improvement. This type of software offers functionality to logically group data, model current services and enable predictive models to support future service growth by using a wide array of analysis techniques.

Software Version Control/Software Configuration Management

These tools support the control of all mainframes, open systems, network, and applications software providing a Definitive Media Library type

repository for the development environment. Information about the version must connect seamlessly with the CMS and Release Management.

Software Test Management

These tools support the testing activities of Release Management and deployment activities providing development, regression testing, user acceptance testing and pre-production QA testing environments. These tools should integrate with Managing Incidents to capture testing-related incidents that may affect the production version of the same software.

Security Management

These tools support and protect the integrity of the network, systems and applications, guarding against intrusion and inappropriate access and usage. As in the systems and network management area, all security-related equipment and software solutions should generate alerts that will trigger the auto-generation of incidents for management through the normal processes.

Project and Portfolio Management

These tools support the registration, decision support, costing, resource management, portfolio visibility and project management of new business functionality and the services and systems that underpin them. Integration points include task assignments in development activities, change and release build information based on the agreed portfolio, capture of resource data from ITSM, TCO of portfolio and resource utilization data to Financial Management, request management linkage to ITSM etc. This tool is often used to underpin the Management Board approval process related to strategic or major change projects.

Financial Management

Financial Management is a critical component of the IT services mission to ensure that there are enough financial resources to maintain and develop the IT infrastructure and professional capabilities in support of the current and future needs of the business. Financial Management tools collect raw metering data from a variety of sources including operating systems, databases, middleware, and software applications associating this usage to users of services from specific departments. These tools will typically federate with the organization's Financial Management applications and ERP system to acquire and share aggregate costs.

Business Intelligence/Reporting

In addition to a statistical analysis on the environment that requires a toolset to support technical data, there is also a need for a common repository of all service information and business-related data. Often these tools are provided by the same vendors who support the statistical analysis software but the focus in this instance is on providing business-related data from all the above toolsets representing a guide to guide the activities of IT as a whole in support of the business customer.

10.2 CRITICAL CONSIDERATION FOR IMPLEMENTING CSI

Before implementing CSI, it's important to have identified and filled the critical roles that have been identified. This would include a CSI Manager, Service Owner, and reporting analyst. A Service Level Manager is really required to be the liaison between the business and IT. Monitoring and reporting on technology metrics, process metrics and service metrics need to be in place. These internal review meetings should take place before any external review meeting with the business.

Where do I start?

Service Approach

An organization can choose to implement CSI activities in diverse ways. One way is to identify a certain service pain point such as a service that is not consistently achieving the desired results. Work with the Service Owner to validate the desired results and the trend results over the past few months. Review any monitoring was carried out. Even if there has not been any component monitoring are conducted, review your Incident tickets, and see if you can find some trends and consistent CIs that are failing more than others that impact the service.

Lifecycle Approach

Another approach is to start looking at the handoff of output from the different lifecycle domains. Service Design needs to monitor and report on their activities and through trend evaluation and analysis, identify improvement opportunities to implement. Need to do this by every part of the lifecycle especially Service Design, Service Transition and Service Operation. Until the service is realized, we may not know if the right strategy was identified, so we may not have input until later for Service Strategy improvement. CSI can be effective well before a service is implemented into the production environment.

Functional Group Approach

Your organization is experiencing plenty of failures or issues with servers. If this is the case, one could argue a good case to focus CSI activities within the functional group responsible for the servers, as server failures have a direct impact on service availability. This could be a pilot of CSI activities before a full rollout across the organization.

10.3 GOVERNANCE

No matter if you are implementing CSI around service management or services it is critical that governance will be targeted from a strategic view. Organizations are facing the need to expand their IT service management strategies from an operational level to tactical and strategic levels to address business process automation, market globalization and the increasing dependency on IT for the efficient and reliable management

and delivery of core business services. Most internal IT departments are system/technology-management-based organizations which are reactive in nature. Transforming to a service-management-based organization is more initiative-taking in nature and is a step to aligning IT with business. Implementing an ITSM process governance organization will support the development of and transformation to a process- and service-based organization and provide the organizational infrastructure to manage process improvement initiatives.

Implementing CSI will affect several parts of the IT organization. Processes, people, technology, and management will undergo change. If you only focus on changing a process or technology CSI will not be effective. **Figure 10.1** identifies certain changes that may have to be addressed. Process re-engineering changes everything.

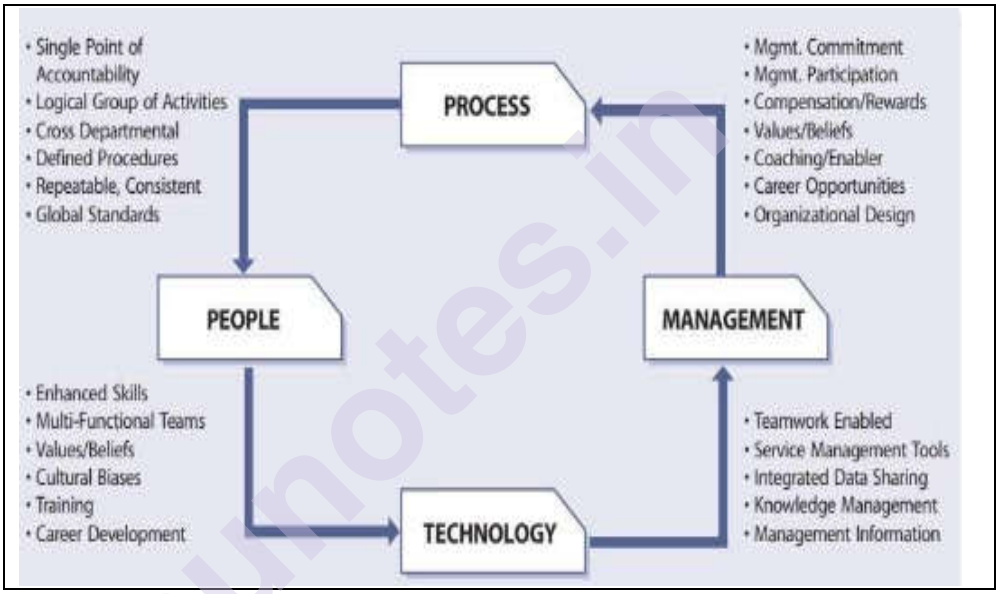

Figure 10.1 Process re-engineering changes everything

10.4 CSI AND ORGANIZATIONAL CHANGE

Project management structures and frameworks fail to consider the softer aspects involved in organizational change such as resistance to change, gaining commitment, empowering, motivating, involving, and communicating. Experience reveals that precisely these aspects that prevent many CSI programmes from realizing their intended aims.

The first five steps in **Table 10.1** identify the basic leadership actions required. Those responsible for managing and steering the CSI programme should consciously address these softer issues. Using an approach as John P. Kotter's ***Eight Steps to Transforming your organization***, coupled with formalized project management skills and practices, increase the chance of success.

Step		Reasons for failure (quotes)
1	Create a sense of urgency	'50% of transformations fail in this phase' 'Without motivation, people won't help and the effort goes nowhere' '76% of a company's management should be convinced of the need'
2	Form a guiding coalition	'Underestimating the difficulties in producing change' 'Lack of effective, strong leadership' 'Not a powerful enough guiding coalition ... opposition eventually stops the change initiative'
3	Create a vision	'Without a sensible vision, a transformation effort can easily dissolve into a list of confusing, incompatible projects that can take the organization in the wrong direction, or nowhere at all' 'An explanation of 5 minutes should obtain a reaction of "understanding" and "interest"'
4	Communicate the vision	'Without credible communication, and a lot of it, the hearts and minds of the troops are never captured' 'Make use of all communications channels' 'Let the managers lead by example ... "walk the talk"'
5	Empower others to act on the vision	'Structures to underpin the vision ... and removal of barriers to change' 'The more people involved, the better the outcome' 'Reward initiatives'
6	Plan for and create quick wins	'Real transformation takes time ... without quick wins, too many people give up or join the ranks of those opposing change' 'Actively look for performance improvements and establish clear goals' 'Communicate successes'
7	Consolidate improvements and produce more change	'Until changes sink deeply into the culture, new approaches are fragile and subject to regression' 'In many cases, workers revert to old practice' 'Use credibility of quick wins to tackle even bigger problems'
8	Institutionalize the change	'Show how new approaches, behaviour and attitude have helped improve performance' 'Ensure selection and promotion criteria underpin the new approach'

Table 10.1 Eight steps that need to be implemented, and the main reasons why transformation efforts fail (from Kotter, 1996)

Half of all transformations fail to realize their goals due to the lack of adequate attention on this step. Not enough people buy into a fact that the change is necessary. Creating a sense of urgency is concerned with answering the question 'What if we do nothing?' Answer to this question for all organizational levels will help gain commitment and to provide input to a business justification for investing in CSI. Power means more than simply official power but also experience, matter, trust and credibility. This team is the guiding coalition for the CSI.

The guiding coalition should be responsible for making sure that a flash-forward is produced describing the aim and purpose of CSI. A good vision statement can serve four important purposes:

- Clarify the direction of the program in the
- Motivate people to act in the proper direction
- Coordinating the actions of many different people
- Outline the aims of senior management.

The sense of urgency ('What if we do nothing?') and the vision ('What's in it for me?') should form the basis of all communication to the stakeholders involved in or impacted by the CSI initiative. An important

aspect of the communication is walking the talk – explaining by example. In the empowering phase, two important aspects need to be stressed: enabling and removing barriers. Empowerment means giving people the tools, training and direction, and assurance that they will be provided to clear and unambiguous fixed goals. Once people are competent, they are accountable.

In CSI it is important to recognize short-, medium- and long-term wins. Changes should sink deeply into the new culture, or the innovative approaches will be fragile and subject to regression:

- **Short-term wins** have the characteristics of compelling, motivating and showing immediate benefits and gains.
- **Medium-term wins** have the characteristics of confidence and capability and having a set of working processes in place.
- **Long-term wins** have the characteristics of self-learning and expertise, and fully integrated processes that are self-learning and improvement built into them; reaching this stage requires a baseline of confident, capable delivery and real understanding.

Change needs to be established within the organization. Lot modifications fail as they are not combined into everyday practice. This is akin to buying a membership to a gym and not going.

Organizational culture is the whole of the ideas, corporate values, beliefs, practices and expectations about behavior and daily customs that are shared by the employees in an organization – the normal way of doing things. Component parts of the culture include:

- The way power is exercised, and people rewarded
- Methods of communication
- The degrees of formality required in working hours and dress and the extent to which procedures and regulations are imposed.

One could say culture is the significant part or a key issue in implementing CSI. Culture could support an implementation, or it could be the bearer of resistance.

10.5 COMMUNICATION AND STRATEGY PLAN

Timely and effective communication is a significant part of any service improvement project. The goal of the communications plan is to build and maintain awareness, understanding, enthusiasm and technical support among key influential stakeholders for the CSI programme. When developing a communication plan, it is important to understand that the effective communication is not just based on a one-way flow of information, and it is more than just meetings. A communication plan must incorporate the ability to deal with responses and feedback from the targeted audiences. The plan should include a role to:

- Design and deliver communications to the different CSI roles, stakeholders such as other ITSM procedure roles and identified target audiences
- Identify forums for customers and user feedback
- Receive and deliver responses and feedback to the project manager and/or process group members. Key activities for the communications plan include:
- Identifying stakeholders and the target audiences
- Developing communications strategy and tactics on
- Identifying communication techniques and methods that
- Identifying the project milestones and other related communications requirements.

An effective communication strategy and plan will focus on creating awareness as to why the organization is going down to the path of implementing service management, why we want to formalize a CSI process, why ITIL was chosen as the best-practice framework. The plan will also need to address providing service management education through formal training programmes or internal discussions, delivering formal training on the new processes and tool that establishes new expectations as well as providing updates as to progress and accomplishments.

A) Defining a communication plan:-

Defining your plan needs to take into consideration the following items:

- **Who is the messenger?** – This is often ignored about the importance of aligning the messenger with the message. There are times when it is appropriate for the CIO to deliver a communication. Another time it may be a Service Owner or Process Owner who should be doing the communicating.
- **What is the message?** – Define the purpose and objective of the message. This needs to be adapted for the target audience. Keep in mind the importance of communicating the benefits of the CSI programme. The WIIFM (what's-in-it-for-me) approach is still valid and must be addressed. Reporting can be a message that was provided.
- **Who is the target audience?** – The target audience for CSI could be senior management, mid-level managers or the staff that are going to be tasked with performing CSI activities.
- **Timing and frequency of communication** – Be sure to plan and execute your communication in a timely manner. The one constant about managing change is that for communication is effective it will take more than a one-time communication.
- **Method of communication** – The old standby of sending e-mails and putting something on the web can work for some forms of communication, but in order to effectively manage change it is

important to have a number of face-to-face meetings where there is an opportunity for two-way communications to take place.

- **Provide a feedback mechanism** – Be sure to provide some method for employees to ask questions and feedback about the change initiative. Someone should have ownership of checking and ensuring responses are provided to the questions/comments that are provided.

We can develop a simple table for our communication plan as shown in Table 10.2.

Messenger	Target audience	Message	Method of communication	Date and frequency	Status
CIO	All of IT	CSI initiative is kicking off	Town hall meeting	Month/day	Planned

Table 10.2 Table for sample communication plan

B) Communication transformation

The strategic management level generally pledges the communication about new initiatives and this should be true for implementing CSI within our organization. The CSI initiative is offered down from the strategic level to the tactical level and then to the operational level. **Figure 10.2** shows how only part of the original content of the vision is handed down ('the shadow of the upper level') to the operational level. As the message is passed through the organizational levels, the clarity and content of the vision is blurred even further.

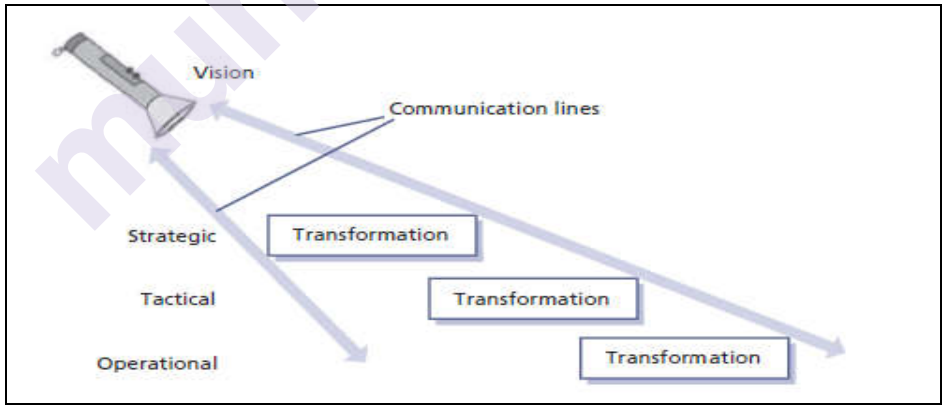

Figure 10.2 Vision becomes blurred

Since each management level has its own distinct transformation procedures they fail to appreciate the feelings of the other levels. This is most obvious for operational level staff, who feel predominantly susceptible if they have not been involved in the considerations. However the promise and energy of operational level staff are vital to the accomplishment of any organizational change.

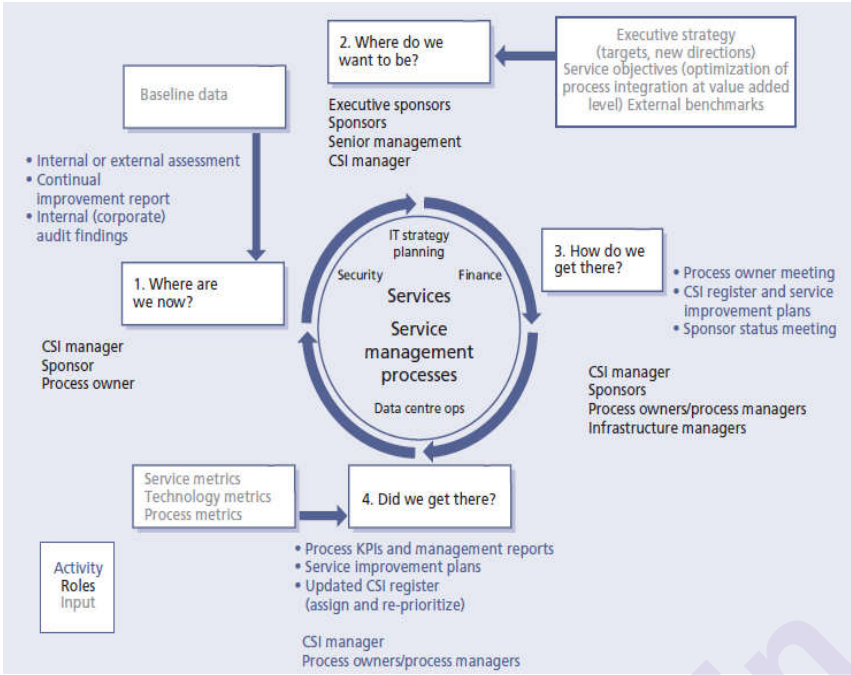

Figure 10.3 CSI roles and inputs

10.6 SUMMARY

In this chapters we have learned the different Tools that Support CSI activities like IT service management suites, Systems and network management, Event management, Automated incident/problem resolution, Knowledge management, Requesting services (service catalogue and workflow), Performance management, Statistical analysis tools, Software version control/software configuration management, Software test management, Information security management, Project and portfolio management, Financial management for IT services and Business intelligence/reporting, also focus on Critical Consideration for Implementing CSI that includes the service approach, life cycle approach and functional approach for implementing CSI around service management or services, it is critical that governance is addressed from a strategic view based on points Business drivers, Process changes. For Project management constructions and outlines fail to take into account the softer features involved in organizational change such as overwhelming resistance to change, gaining commitment, empowering, motivating, involving and communicating. The eight steps, which smear equally to ITSM application programmes like Create a sense of urgency, Form a guiding coalition, Create a vision, Communicate the vision, Empower others to act on the vision, Plan for and create quick wins, Consolidate improvements and produce more change & Institutionalize the change. Developing a governance structure is important for validating CSI in our organization. CSI will need that key roles are filled for trend evaluation, analysis reporting and decision making. Process acquiescence is critical for confirming the proper output for process metrics to be used for identifying process improvement initiatives. Technology will need to be in place for monitoring and reporting. Communication is critical to help change employees' behaviour. Communication will be essential to identify

the target audience, who the messenger is, what message is being communicated and what is the best way to communicate the message. **Figure 10.3** shows the roles and key inputs that are involved in the diverse phases of continual improvement.

10.7 QUESTIONS

1. Explain the tools used to support CSI activities?
2. Write a short note on IT Service Management suites.
3. What are the different approaches for starting CSI activities?
4. Why is governance important for CSI activities?
5. Explain the 8 steps for transforming your organization given by John P. Kotter.
6. What factors need to be considered when preparing a communication plan?
7. Justify the need of Tools to support CSI activities.

10.8 REFERENCES

- ITIL v3 Foundation Complete Certification Kit
- ITIL v3 Service Strategy
- ITIL v3 Service Design
- ITIL v3 Service Transition
- ITIL v3 Service Operation
- ITIL v3 Continual Service Improvement

Multiple Choice Questions :

1) _____ gave the eight steps to increase the chance of success for an organization.

a) Deming b) Einstein

c) Boehm d) Kotter

2) _____ has the mission of guaranteeing that the potential disparities are managed and that when there is a gap, to identify if there is a requirement for a SIP.

a) Service Level Management b) Service Level Operation

c) Service Level Transition d) Service Level Strategy

3) 'Six Sigma' was given by _____.

a) LG b) Motorola

c) Samsung d) Nokia

4) The _____ model is also applied in client/server models widely used in software design and enterprise architecture.

a) Process b) Agency

c) Service d) Functional

5) With _____, it is easier to make changes internal to the resource without adversely affecting utilization.

a) tight coupling b) loose coupling

c) loose cohesion d) tight cohesion

6) An additional evaluation stage may be necessary if services and solutions are involved.

a) external supplier b) internal supplier

c) third party d) partner's

7) What is the risk category 3 for change impact/risk categorization matrix?

a) Low impact, High probability b) Low impact, Low probability

c) High impact, Low probability d)High impact, High probability

8) "Document the use of application with real-life scenarios to demonstrate its boundaries and its full functionality while are used to clarify scope and direction with the sponsor."

a) Use Cases, Change Cases b) Use, Change Cases

c) Specific Cases, Live Cases d) ER diagram, Sequence Diagram

9) Which ITIL concept could be described as a “generic description for many varying types of demands that are placed upon the IT Department by the users”?

a) Service Demand b) Service Request

c) A customer requested event d) Standard Change

10) For what is the RACI Model used?

a) Performance Analysis

b) Recording Configuration Items

c) Monitoring Configuration Services

d) Defining Roles and Responsibilities

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