

# IT Service Management Simple (for real)

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## **1. Disclaimer**

The course is interesting, but its contents are not clearly explained by the professor and having a condensed, easy-to-read file, I think it's very nice.

The course itself I think it's really interesting for the themes; it revolves around an entire framework to apply inside companies. The professor is knowledgeable, probably a lot abstract and time could be employed even better in cases, but overall I think it's good if you care about the themes.

He makes a lot of examples here and there, but simply gather notes, make ideas and then make ITIL4 quizzes. A lot of them.

## **2. 02 - Information System Governance**

- Services comprise the largest and most dynamic component of both developed and developing economies.
- Services are the main way that organizations create value for themselves and their customers.
- Almost all services today are IT-enabled, which means there is tremendous benefit for organizations in creating, expanding, and improving their IT service management capability.

Technology is advancing faster today than ever before.

- We are dealing with the 4th Industrial Revolution
  - Developments such as cloud computing, infrastructure as a service (IaaS), machine learning, and blockchain are source of innovation and competitive advantage

Business context is very dynamic and not definable a priori.

- New forms of business are born
- Not enough time to activate cycles of revision and modification
- Achievable via a paradigm shift allowing the company to easily adapt

A new paradigm makes organizations face a radical change

- Fewer indicators
- Obtain a reasonable consistency with information and costs

### IS (Information System) Governance

- is a set of logics and tools aimed at creating a structural set-up and a governance context of the Company Information System that make it constantly consistent with the business needs in environments characterized by a high level of complexity

### The Governance logic

- naturally tends to good performance
- tries to guide action towards practice
- it tries to balance the Information System towards an optimal setup able to pass the gap between company requirements and its capabilities

The Corporate Governance contains both IS Governance and IT Governance, allowing for governance and management to go in parallel.

- IT Governance takes IT Management (present) and goes into the future
- IS Governance has to work with different degrees and methods
  - According to the level of integration, homogeneity and degree of control

### Maturity

- means dealing with problems in new/original ways while learning from mistakes

It can be defined with different reference models for the organization:

- Deming Cycle (Plan/Do/Check/Act)
- Gartner's scale to predict and avoid problems
- ISO 15504 (SPICE - Software Process Improvement and Capability Determination)
  - Different capability levels
  - Different process attributes
- COSO (Committee of Sponsoring Organizations of the Treadway Commission)
  - Classifies processes according to their level of management
- Kiviat Diagram
  - Allows to see things on different dimensions and make comparisons

There are different levels of it, according to different visions of the previous ones:

- Initial/Chaotic
- Managed/Reactive
- Defined
- Quantitatively managed/Proactive/Service
- Optimizing/Predictive/Value

We also need metrics able to compare maturity in a good way. Examples are:

- CSF – Critical Success Factor, which is required for ensuring the success of a company or an organization
- KPI – Key Performance Indicator, a quantifiable measure of performance over time for a specific objective

Maturity can be achieved through training:

- Efficiency and Effectiveness
- Work ethic
- Problem solving
- Communication skills
- Teamwork

### **3. 03 - ITIL and ITSM**

#### Service Management

- Definition: “A set of specialized organizational capabilities for enabling value for customers in the form of services”
- It encompasses all activities that an enterprise performs, maintaining control of operations
- Allows products and services to bring value and has to react flexibility to change
- Organizational capabilities understand value, nature and scope of stakeholders, organizing capacity and ability the best way possible
- The provider delivers the service, and the consumer receives value; the consumer plays no role in creating value for themselves, given complex and interdependent relationships
- There are different methodologies and ITIL is one of them, which is process-centric
- Based on 4 P's: Persons, Processes, Products, Partners

#### ITIL - (Information Technology Infrastructure Library)

- Definition: “Set of guidelines for IT infrastructures, helping business evaluate services for required improvement, making implementations easy for businesses and crafting strategies to take decisions”
- Born thanks to figures like Margaret Thatcher expressed the importance of getting value from the technology
- Need to standardize IT practices across different government functions
- 4 versions, basically incorporating wider practice standards, being more accessible and adopting a lifecycle approach
- We focus on ITIL 4

#### *Service Management (ITSM) vs ITIL: what's the difference?*

- Service Management relates to how you manage the services you deliver to your business partners or customers
- ITIL is simply one of many items you may have in your toolbox to help you do this well

Between different versions:

- important to connect business with infrastructure management
- each part of the company has its own responsibility
- handling resources the best way requires a credible design, going smoothly and transitioning easily
- different processes overlap, giving value to each other

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*Has ITIL V4 dropped the ITIL V3 service lifecycle?*

- A key innovation of ITIL V3 was the introduction of the service lifecycle
  - consisting of five service lifecycle stages
  - the ITIL V3 processes are distributed across this service lifecycle; for instance, the incident management process is part of the service operation stage
  - ITIL V4 has dropped most references to the service lifecycle, but continual improvement has remained a key concept

## **4. 04 - Service Management**

ITIL v4 expanded scope compared to previous versions:

- approaching with the correct logic problems in a different way
- acting directly on the organizational culture and operational practices
- overtime, the ITIL scope became wider and wider
- creating a chain between services and users, determining how to control CI

It became wider and wider:

- Based on practices (34) grouped into 3 areas
- Beyond the IT, closer to corporate governance
- Principle-centric
- It helps to create the expected value and deliver it
- Preventing risks and measuring/reporting

### Process

- series of actions which are carried out in order to achieve a particular result
  - input well-defined
  - through following standard procedures
  - output is granted
- objectives are clearly described
- an organization can use multiple processes
- people have to become responsible in using and controlling them
  - to be more efficient/effective
  - to avoid conflicts of interest

### *Processes vs Procedures:*

- Processes
  - they are about what needs to be done
  - structured workflows designed to achieve objectives
  - activities at the highest level and often represent a standard for the entire organization
  - can be divided into series of tasks
  - each one has a process owner

## *IT Service Management Simple (for real)*

- Procedures
  - they are about how to do it
  - step-by-step instructions on how to perform specific tasks within processes
  - contain a greater level of detail and describe who performs certain activities within a process
  - may change between various departments or activities

In both cases, *policies* are high-level statements that set the direction, intent, and rules governing an organization's actions and decision-making.

- Quality here helps making continuous improvement according to standards
- One of the main problems for many organizations is that roles and responsibilities are not clearly defined
- Many tasks and risks of confusion

## IT Service Management (ITSM)

- Discipline that deals with planning, designing and managing the Information Technology (IT) systems of an organization
- IT service providers must consider the quality of services they provide and focus on the relationship with the customer

## Organization

- Definition: "A person or a group of people that has its own functions, responsibilities, and relationships to achieve its objectives"
- The purpose of an organization is to create value for stakeholders
- Vary in size and complexity and hold different roles

## Value

- Definition: "The perceived benefits, usefulness, and importance of something"
- Based on the recipient's perception, which determines the final value
- There is *value co-creation*: made through collaboration between service provider and consumer, providing active consumer engagement
- Organizations provide different roles, depending on perspective and discussion

## Service Provider

- Definition: "A role performed by an organization in a service relationship to provide services to consumers"
- Clear understanding on who the customers are and understand their role and relationships



### Service Consumer

- Definition: “A role performed by an organization in a relationship that uses (or consumes) those services”

*Service relationships* are different and complicated: one can be both a supplier and a consumer at the same time. There are infact different roles involved in *service consumption*:

- Customer: A person who defines the requirements for a service and takes responsibility for the outcomes of service consumption
- User: A person who uses services
- Sponsor: A person who authorizes budget for service consumption

Beyond the consumer and provider roles, there are usually many other stakeholders that are important to value creation.

- Examples include individual employees of the provider organization, partners and suppliers, investors and shareholders, government organizations such as regulators, and social groups

Organizations own or have access to a variety of resources, including people, information and technology, value streams and processes, and suppliers and partners.

### Service

- Definition: “A means of enabling value co-creation by facilitating outcomes that customers want to achieve without the customer having to manage specific costs and risks”
- it may be based on a product

### Product

- Definition: “A configuration of an organization’s resources designed to offer value for a consumer”
- it combines and simplifies organization’s services
- created with several target consumer groups in mind (not exclusive to one)
- typically complex and not fully visible to the consumer

Service providers present their services to consumers in the form of service offerings, which describe one or more services based on one or more products.

### Service offering

- Definition: “A formal description of one or more services, designed to address the needs of a target consumer group. A service offering may include goods, access to resources, and service actions.”
- these may include goods to be supplied to a consumer, access to resources granted to a consumer and service actions performed to address a consumer’s needs

### Service relationship

- Definition: “A corporation between a service provider and service consumer, including service provision, service relationship management”
- They are established between two or more organizations to co-create value
- In a service relationship, organizations will take on the roles of service providers or service consumers (not mutually exclusive)
- Joint activities to ensure continual value co-creation

When services are delivered by the provider, they create new resources for service consumers, or modify their existing ones.

The service consumer can use is new or modified resources to create its products to address the needs of another target consumer group, thus becoming a service provider.

### Service provision

- Definition: “The activities performed by an organization to provide the services”
- It includes provider resources management, access to those ones, fulfillment of actions and continual improvement

### Service consumption

- Definition: “The activities performed by an organization to consume the services”
- It includes management of consumer’s resources and service actions performed by users

Achieving desired outcomes requires resources (and therefore costs) and is often associated with risks. Service providers help their consumers to achieve outcomes, and in doing so, take on some of the associated risks and costs.

Acting as a service provider, an organization produces outputs that help its consumers to achieve certain outcomes.

### Output

- Definition: “A tangible or intangible deliverable of an activity”

### Outcome

- Definition: “A result for a stakeholder enabled by one or more outputs”
- Services facilitate outcomes through one or more outputs
- One should care more about the outcome for this reason, creating metrics measuring those
- These allow for balancing between value achievement, enabling cost reduction if there is value co-creation
  - This allows for changing in value proposition, allowing to fully understand the outcomes a consumer wants to achieve

### Cost

- Definition: “The amount of money spent on a specific activity or resource”
- There are costs removed or imposed from the consumer by the service

### Risk

- Definition: “A possible event that could cause harm or loss or make it more difficult to achieve objectives. Can also be defined as uncertainty of outcome and can be used in the context of measuring the probability of positive outcomes as well as negative outcomes”
- It should be avoided (removed from service) but also accepted (when cost is considered low), transferring it but also mitigating it

To evaluate whether a service or service offering will facilitate the outcomes desired by the consumers and therefore create value for them, the overall utility and warranty of the service should be assessed.

### Utility

- Definition: “The functionality offered by a product or service to meet a particular need”
- Utility can be summarized as ‘what the service does’ and can be used to determine whether a service is ‘fit for purpose’
- To have utility, a service must either support the performance of the consumer or remove constraints from the consumer. Many services do both.

### Warranty

- Definition: “Assurance that a product or service will meet agreed requirements”
- Warranty can be summarized as ‘how the service performs’ and can be used to determine whether a service is ‘fit for use’
- Warranty often relates to service levels aligned with the needs of service consumers. This may be based on a formal agreement, or it may be a marketing message or brand image
- Warranty typically addresses such areas as the availability of the service, its capacity, levels of security and continuity
  - A service may be said to provide acceptable assurance, or ‘warranty’, if all defined and agreed conditions are met

## 5. 05 - Dimensions of Service Management

To achieve their desired outcomes and work as effectively as possible, organizations should consider all aspects of their behaviour. In practice, however, organizations often become too focused on one area of their initiatives and neglect the others.

To support a *holistic approach* to service management, ITIL defines four dimensions that collectively are critical to customers and stakeholders value:

1. organizations and people
2. information and technology
3. partners and suppliers
4. value streams and processes

These are perspectives and constraints influenced by several factors. If one fails to address them all, it may result in services becoming undeliverable and not meeting expectations. These apply to both service management and services being managed.

### 1° Dimension - Organizations and People

- Key message: “The complexity of organizations is growing, and it is important to ensure that the way an organization is structured and managed, as well as its roles, responsibilities, and systems of authority and communication, is well defined and supports its overall strategy and operating model”
- There needs to be a culture of shared values supporting the organization’s objectives, starting at the top then funneling down throughout the company
- Every person should have a clear understanding of their contribution
- Focus on value is a key for an organization, covering all roles, responsibilities, culture and competencies as a whole

### 2° Dimension - Information and Technology

- Key message: “When applied to the Service Value System - SVS, the information and technology dimension includes the information and knowledge necessary for the management of services, as well as the technologies required. It also incorporates the relationships between different components of the SVS, such as the inputs and outputs of activities and practices.”
- For many services, Information Management is the primary means of enabling customer value
- Requires different tools and knowledge bases, collaborating across different platforms
- Information role changes, depending on the nature of IT services and considering emerging technologies
- Technology has to incorporate inputs and outputs precisely, ensuring all inside of a business can function properly

### 3° Dimension - Partners and Suppliers

- Key message: “The partners and suppliers dimension encompasses an organization’s relationships with other organizations that are involved in the design, development, deployment, delivery, support, and/or continual improvement of services. It also incorporates contracts and other agreements between the organization and its partners or suppliers”
- This may involve several relationships with contracts and partnerships
- An organization can both act as a service provider and a service consumer
- When using those ones, an organization’s strategy should be based on its goals, culture and business environment
- Service integration allows for coordination of service relationships, which may be kept inside of an organization but also delegated to trusted partners

Different *factors* may influence an organization’s strategy:

- Strategic focus (on organization’s core competencies)
- Corporate culture (cultural/historical bias)
- Resource scarcity (without having suppliers)
- Cost concerns (by decisions of service provider)
- Subject matter expertise (less risky to use experts)
- External constraints (e.g., policies)
- Demand patterns (seasonal or high degrees of availability)

### 4° Dimension - Value Streams and Processes

- Key message: “Applied to the organization and its SVS, the value streams and processes dimension is concerned with the various parts of the organization work in an integrated and coordinated way to enable value creation through products and services.”
- “The dimension focuses on what activities the organization undertakes and how they are organized, as well as how the organization ensures that it is enabling value creation for all stakeholders efficiently and effectively”
- A *value stream* is a series of steps taken to create and deliver products and services to consumers
- A *process* is a set of interrelated or interacting activities that transforms inputs into outputs
- A *well-defined process* can improve productivity, be optimized and automated

Service providers do not operate in isolation. They are affected by many external factors, and work in dynamic and complex environments that can exhibit high degrees of volatility and uncertainty and impose constraints on how the service provider can work.

To analyze these external factors, frameworks such as the PESTLE (or PESTEL) model are used.

- PESTLE is an acronym for the Political, Economic, Social, Technological, Legal, and Environmental factors that constrain or influence how a service provider operates

Some examples:

- Environmental concerns may lead to investing in green technologies, partnering with eco-friendly providers
- Economic and social factors may drive creating different product/service tiers for different consumer segments (e.g. free vs premium streaming services)
- Data protection laws/regulations like GDPR impact how customer data is collected, processed, accessed, stored and how companies work with partners/suppliers
- Political factors, social attitudes can shape organizational policies and practices

## 6. 06 - Service Value System

For Service Management to function properly, it needs to work as a system.

- Key message: “The ITIL SVS describes how all the components and activities of the organization work together as a system to enable value creation. Each organization’s SVS has interfaces with other organizations, forming an ecosystem that can in turn facilitate value for those organizations, their customers, and other stakeholders”.
- To avoid the presence of organizational silos (fragmentation in precise parts of organization which may reduce efficiency), requiring integration between teams and activities
- Has to ensure the organization continuously co-creates value with all stakeholders through use of products and services
- Supports various work approaches which regards the whole organization

The key inputs to the SVS are:

- *Opportunities* represent options or possibilities to add value for stakeholders or otherwise improve the organization
- *Demand* is the need or desire for products and services among internal and external consumers

Opportunity and demand trigger activities within the ITIL SVS, and these activities lead to the creation of value. Opportunity and demand are always entering into the system, but the organization does not automatically accept all opportunities or satisfy all demand.

The outcome of the SVS is *value*, that is, the perceived benefits, usefulness, and importance of something. The ITIL SVS can enable the creation of many different types of value for a wide group of stakeholders.

The ITIL SVS includes the following components:

- *Guiding principles*: Recommendations that can guide an organization in all circumstances
- *Governance*: The means by which an organization is directed and controlled
- *Service value chain*: A set of interconnected activities that an organization performs to deliver a valuable product or service to its consumers and to facilitate value realization
- *Practices*: Sets of organizational resources designed for performing work or accomplishing an objective
- *Continual improvement*: A recurring organizational activity performed at all levels to ensure that an organization’s performance continually meets stakeholders’ expectations

## 7. 07 - Guiding Principles

A guiding principle:

- “is a recommendation that guides an organization in all circumstances, regardless of changes in its goals, strategies, type of work, or management structure. It’s universal and enduring”

The *guiding principles* embody the core messages of ITIL and service management in general, supporting successful actions and good decisions of all types and at all levels:

- These are incorporated in many frameworks
- Organization should apply them considering how they are relevant and how they apply together
- They apply to any initiative and to all relationships/groups

### 1° Principle - Focus on value

- All activities conducted by the organization should link back, directly or indirectly, to value for itself, its customers, and other stakeholders
- Understand who the consumer is, his perspectives of value, his experience and how to bring operational activity at best during initiatives

### 2° Principle - Start where you are

- Don’t remove what was done in the past, instead use what’s already available to be leveraged
- Assess where you are now and measure precisely how to be accurate with what you have, applying skills and re-use

### 3° Principle - Progress iteratively with feedback

- Resist the temptation to do everything at once. Even huge initiatives must be accomplished iteratively
- By organizing work into smaller, manageable sections that can be executed and completed in a timely manner, the focus on each effort will be sharper and easier to maintain
- Working in a time-boxed and embedded feedback loops allows for greater flexibility, faster responses to needs, the ability to respond to failure earlier, and an overall improvement in quality
- *Feedback loop* occurs when part of the output of an activity is used as a new input
  - Feedback is essential, comprehending the whole but doing things precisely and completely
  - This has to be done flexibly and together

### 4° Principle - Collaborate and promote visibility

- When initiatives involve the right people in the correct roles, efforts benefit from better buy-in, more relevance (because better information is available for decision-making) and increased likelihood of long-term success
- Collaboration is about working together and increasing visibility and does not mean consensus



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- Improvement may take a lower priority, but requires collaborative and holistic work
- Communication should be done the right way and decisions only made on visible data, communicating in a way audience can hear
- Data should be clearly understandable (e.g., kanban boards, information radiators)

### 5° Principle - Think and work holistically

- No service, practice, process, department, or supplier stands alone. The outputs that the organization delivers to itself, its customers, and other stakeholders will suffer unless it works in an integrated way to handle its activities as a whole, rather than as separate parts
- All the organization's activities should be focused on the delivery of value
- Recognize the system complexity, work through collaboration and look for patterns between elements, facilitating work

### 6° Principle - Keep it simple and practical

- Always use the minimum number of steps to accomplish an objective. Outcome-based thinking should be used to produce practical solutions that deliver valuable outcomes
- If a process, service, action, or metric fails to provide value or produce a useful outcome, then eliminate it. Although this principle may seem obvious, it is frequently ignored, resulting in overly complex methods of work that rarely maximize outcomes or minimize cost
- Judge what to keep, find conflicting objectives and ensure better value at all levels, with the right people and with the right number of things, achieving goals simply

### 7° Principle - Optimize and automate

- Organizations must maximize the value of the work carried out by their human and technical resources
- *Optimize* means taking something to make it as effective and useful as it can be
- *Automate* means using technology to perform a step or series of steps correctly and consistently, automating frequent and repetitive tasks
- Technology can help with limited or no human intervention organizations to scale up and take on frequent and repetitive tasks, allowing human resources to be used for more complex decision-making
- However, technology should not always be relied upon without the capability of human intervention, as automation for automation's sake can increase costs and reduce organizational robustness and resilience
- When applying this principle, follow the previous ones wisely

## 7.1. 07.a - Other philosophies

ITIL Guiding Principles are reflected in many other frameworks, methods, standards, philosophies, and/or bodies of knowledge, such as Lean, Agile, DevOps, and COBIT. This allows organizations to effectively integrate multiple methods into an overall approach to service management.

### Lean approach

- Value is defined from the customer's perspective
- Only what the customer is willing to pay for adds value
- Everything else is considered waste (called *muda*)
- It applies to all fields of business and identifies several types of waste in all production levels and applies in IT to products and services as well
- Ensures information flows smoothly and eliminates bottlenecks
- Linkages between elements sometimes create a cascade of waste (the so-called domino effect)

### Agile approach

- Instead of having one big project approached together (big bang), an agile team delivers work in small, consumable increments
- Requirements, plans, and results are evaluated continuously so teams have a natural mechanism for responding to change quickly
- Based on 12 principles of the Agile manifesto
- Key concepts include cross-functional teams, prioritizing user stories by business value, timeboxed sprints or iterations, daily standups, and continuous customer feedback

### Scrum approach

- One of the most popular implementations of the Agile process. In Scrum, cross-functional teams work in short, timeboxed sprints (usually 2-4 weeks) to achieve specific goals
- It uses some form of kanban system to visualize and limit work in progress, and follows the PDCA cycle with continuous improvements, which is the base of Lean
- Has different roles and planning reviews to accompany the organization work

### DevOps approach

- A set of practices that combines software development (Dev) and IT operations (Ops) to shorten the life cycle from developing a plan to releasing and operating software products and services. The goal is to rapidly deliver applications and services iteratively through automation
- Basically, DevOps is when dev teams that make stuff are also the ones responsible for the support of their own software in production - end-to-end ownership

## 8. 08 - Service Value Chain

The central element of the SVS is the service value chain, which is:

- “an operating model which outlines the key activities required to respond to demand and facilitate value realization through the creation and management of products and services”

Other features we can list:

- They are not a linear sequence of actions, runnable in a flexible way having strong interrelationships
- Instead, a service value stream can be seen as “specific combinations of activities and practices and each one is designed for a particular scenario”
- They allow to carry out specific tasks or to respond to particular situations, combining activities and practices for many scenarios
- Once designed, value streams should be subject to continual improvement
- These activities represent the steps an organization takes in the creation of value
  - each activity transforms inputs into outputs
  - all activities are interconnected, each receiving and providing triggers for further actions
- To convert inputs into outputs, the value chain activities use different combinations of ITIL practices
  - drawing on internal or third-party resources, processes, skills, and competencies as required
- Understanding the activities and the service value chain, and how they interconnect, describes the interconnected nature of the service value chain, adapting to each context

Regardless of which practices are deployed, there are some common rules when using the service value chain:

- All incoming/outgoing interactions with parties external to the value chain are performed via *engage*
- All new resources are obtained through *obtain/build*
- Planning at all levels is performed via *plan*
- Improvements at all levels are initiated and managed via *improve*

Let's go into the detail of each value chain activity.

### Plan

- Ensure a shared understanding of the vision, current status, and improvement direction for all four dimensions and all products and services across the organization

*Inputs:*

- Governance policies and constraints
- Demands and opportunities from stakeholders
- Performance data and improvement plans

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- Information on new or changed products/services

#### *Outputs:*

- Strategic, tactical, and operational plans
- Decisions and policies for design & transition
- Feedback for improvement initiatives
- Portfolio and contract requirements for engagement

### Improve

- Ensure continual improvement of products, services and practices across all value chain activities and the four dimensions of service management

#### *Inputs:*

- Performance data from deliver & support
- Stakeholder feedback, info about third-party components from engage
- Knowledge about new/changed products/services from design & transition and obtain/build
- Performance metrics and improvement opportunities from all value chain activities

#### *Outputs:*

- Improvement initiatives and plans for all value chain activities
- Performance information from plan and governance body
- Status reports on improvement initiatives
- Contract and agreement requirements for engage
- Service performance data for design & transition

### Engage

- Provides a good understanding of stakeholder needs, continual engagement, and transparency, and maintains good relationships with all stakeholders

#### *Inputs:*

- Product and service portfolio
- Demand from customers and detailed requirements
- Feedback, incidents, and requests from users
- Completion data of user support tasks
- Marketing opportunities
- Cooperation and feedback from partners/suppliers

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- Contract requirements from all activities
- Knowledge about products/services and third-party components
- Performance data
- Improvement initiatives and status reports

#### *Outputs:*

- Consolidated demands/opportunities
- Product/service requirements
- User support tasks
- Improvement opportunities and feedback
- Change/project initiation requests
- Contracts/agreements with suppliers/partners
- Knowledge about third-party components
- Service performance reports

### Design and Transition

- Ensure that products and services continually meet stakeholder expectations for quality, cost, and time to market

#### *Inputs:*

- Portfolio decisions, architectures, and policies from plan
- Product and service requirements and knowledge about third-party service components from engage
- Improvement initiatives, plans, status reports and performance information from improve
- Service components and knowledge about new and changed products from obtain/build

#### *Outputs:*

- Requirements and specifications for obtain/build
- Contract and agreement requirements for engage
- New and changed products and services for deliver and support
- Knowledge about new and changed products and services for all value chain activities
- Performance information and improvement opportunities for improve

### Obtain/Build

- To ensure that service components are available when and where they are needed, and that they meet agreed specifications

#### *Inputs:*

- Architectures and policies from plan
- Contracts and agreements with suppliers/partners, knowledge about third-party service components and change/project initiation requests from engage
- Goods and services from suppliers/partners
- Requirements and specifications from design & transition
- Improvement initiatives, plans and status reports from improve
- Change requests from deliver & support
- Knowledge about new/changed products/services from design & transition

#### *Outputs:*

- Service components for deliver & support
- Service components for design & transition
- Knowledge about new/changed service components for all value chain activities
- Contract and agreement requirements for engage
- Performance information and improvement opportunities for improve

### Deliver and support

- To ensure that services are delivered and supported according to agreed specifications and stakeholders' expectations

#### *Inputs:*

- New and changed products and services from design & transition
- Contracts and agreements with suppliers/partners, user support tasks and knowledge about third-party service components from engage
- Service components from obtain/build
- Improvement initiatives and plans and improvement status reports from improve
- Knowledge about new/changed service components and services from design & transition and obtain/build

#### *Outputs:*

- Services delivered to customers and users
- Information on the completion of user support tasks, contract and agreement requirement for engage

*IT Service Management Simple (for real)*

- Product and service performance information for engage and improve
- Improvement opportunities for improve
- Change requests for obtain/build
- Service performance information for design & transition

## 9. 09 - Continual Improvement

Continual improvement allows:

- aligning an organization's practices and services with changing business needs, through the ongoing assessment and improvement of each element involved in the management of products and services
- has a series of principles applicable at every step, not being integral part of a specific framework, but allowing guidance towards success

Other features:

- It takes place in all areas of the organization and at all levels, from strategic to operational
- To maximize the effectiveness of services, each person who contributes to the provision of a service should keep continual improvement in mind, and should always be looking for opportunities to improve
- It applies to the SVS in its entirety, as well as to all of the organization's products, services, service components, and relationships
- It increases the likelihood that ITSM initiatives will be successful, putting focus on the customers and ensuring improvements efforts can be linked back to the organization's vision, dividing work in small/manageable pieces

To support continual improvement at all levels, the ITIL SVS includes:

- the ITIL continual improvement model, which provides organizations with a structured approach to implementing improvements as a high-level guide to support all activities
- the improve service value chain activity, which embeds continual improvement into the value chain
- the continual improvement practice, supporting organizations in their day-to-day improvement efforts, in a cohesive and coherent way

It supports multiple steps:

Step 1: What is the vision?

*Key Message:*

- Each improvement initiative should support the organization's goals and objectives
  1. Translating the vision and objectives so that the context is understood
  2. Create a high-level vision for the planned improvement

Focuses on two key areas:

- The organization's vision and objectives need to be translated for the specific business unit, department, team, and/or individual, so that the context, objectives, and boundaries for any improvement initiative are understood.
- A high-level vision for the planned improvement needs to be created



The work within this step should ensure that:

- the high-level direction has been understood
- the planned improvement initiative is described and understood in that context
- the stakeholders and their roles have been understood
- the expected value to be realized is understood and agreed
- the role of the person or team responsible for carrying out the improvement is clear in relation to achieving the organization's vision

#### Step 2: Where are we now?

*Key Message:*

- The success of an improvement initiative depends on a clear and accurate understanding of the starting point and the impact of the initiative
- An improvement can be thought of as a journey from Point A to Point B, and this step clearly defines what Point A looks like
- A journey cannot be mapped out if the starting point is not known

Some observations:

- You need to know your starting point to properly plan out your journey
- Conduct current-state assessment of the existing services
- Fix a baseline: report or metric that serves as a starting point against which progress, or change can be assessed

#### Step 3: Where do we want to be?

*Key Message:*

- Just as the previous step (Step 2) describes Point A on the improvement journey, Step 3 outlines what Point B, the target state for the next step of the journey, should look like
- A journey cannot be mapped out if the destination is not clear

Some observations:

- Based on the results of the previous, a gap analysis can be performed, which evaluates the scope and nature of the distance to be travelled from the starting point to the achievement of the initiative's vision
- Some metrics are present such as the Key Performance Indicators (KPIs) and Critical Success Factors (CSFs), allowing to reach destination and going towards the vision
- This allows to clearly fix goals and be useful even for stakeholders

Step 4: How do we get there?

*Key Message:*

- The plan for Step 4 can be a straightforward and direct route to completing a single simple improvement, or it may be more involved
- The most effective approach to executing the improvement may not be clear, and it will sometimes be necessary to design experiments that will test which options have the most potential

Some observations:

- Even if the path to follow is clear, it may be most effective to carry out the work in a series of iterations, each of which will move the improvement forward part of the way
- With each iteration, there is an opportunity to check progress, re-evaluate the approach, and change direction if appropriate
- Create your plan
- Check progress after each iterative of your plan
- If you fail to plan, then you plan to fail

Step 5: Take action

*Key Message:*

- In Step 5 the plan for the improvement is acted upon. This could involve a traditional waterfall-style approach, but it could be more appropriate to follow an Agile approach by experimenting, iterating, changing directions, or even going back to previous steps

Some observations:

- Measuring progress towards the vision
- Managing the risk during these changes
- Ensuring the visibility of the initiative is spread throughout the organization

Step 6: Did we get there?

*Key Message:*

- Too often, once an improvement plan is set in motion, it is assumed that the expected benefits have been achieved, and that attention can be redirected to the next initiative
- In reality, the path to improvement is filled with various obstacles, so success must be validated

Some observations:

- Success is not guaranteed
- Conduct the current state assessment again

Step 7: Keep the momentum going

*Key Message:*

- If the improvement has delivered the expected value, the focus of the initiative should shift to marketing these successes and reinforcing any new methods introduced
- This is to ensure that the progress made will not be lost and to build support and momentum for the next improvements

Some observations:

- Attempt to continue the improvement again across the organization
- If this step is skipped, then it is likely that improvements will remain isolated and independent initiatives
- It may also be difficult to get support for future improvements

## **10. 10 - ITIL Practices**

- The ITIL SVS includes 14 general management practices, 17 service management practices, and 3 technical management practices
  - all of which are subject to the four dimensions of service management

A practice:

- is a set of organized resources designed for performing work or accomplishing an objective

The origins of the practices are as follows:

- *General Management*
  - have been adopted and adapted for service management from general business management domains
- *Service Management*
  - have been developed in service management and ITSM industries
- *Technical Management*
  - have been adapted from technology management domains for service management purposes by expanding or shifting their focus from technology solutions to IT services

Each practice:

- supports multiple service value chain activities
- includes resources based on the 4 dimensions of service management

## 11. 11 - General Management Practices

There are 14 general practices to list:

### Architecture management:

- has to provide an understanding of all the different elements that make up an organization and how those elements interrelate, enabling the organization to effectively achieve its current and future objectives
- it provides the principles, standards, and tools that enable an organization to manage complex change in a structured and Agile way
- given the environment to work with is generally complex, we want a way to have better management of processes, resources and contracts, making changes easy to implement

There are several types of architecture:

- *Business* architecture
  - The business architecture allows the organization to look at its capabilities in terms of how they align with all the detailed activities required to create value for the organization and its customers
  - These are then compared with the organization's strategy and a gap analysis of the target state against current capabilities is performed
  - Identified gaps between the baseline and target state are prioritized and these capability gaps are addressed incrementally
  - A "roadmap" describes the transformation from current to future state to achieve the organization's strategy
- *Service* architecture
  - Service architecture gives the organization a view of all the services it provides, including interactions between the services and service models that describe the structure (how the service components fit together) and the dynamics (activities, flow of resources, and interactions) of each service
  - A service model can be used as a template or blueprint for multiple services
- *Information systems* architecture, including data and applications architectures
  - The information architecture describes the logical and physical data assets of the organization, and the data management resources
  - It shows how the information resources are managed and shared for the benefit of the organization
  - Information is a valuable asset for the organization, with actual and measurable value
  - Information is the basis for decision-making, so it must always be complete, accurate, and accessible to those who are authorized to access it
  - Information systems must therefore be designed and managed with these concepts in mind

## *IT Service Management Simple (for real)*

- *Technology* architecture
  - The technology architecture defines the software and hardware infrastructure needed to support the portfolio of products and services
- *Environmental* architecture
  - The environmental architecture describes the external factors impacting the organization and the drivers for change, as well as all aspects, types, and levels of environmental control and their management
  - The environment includes developmental, technological, business, operational, organizational, political, economic, legal, regulatory, ecological, and social influences

### Continual improvement:

- allows to align the organization's practices and services with changing business needs through the ongoing improvement of products, services, and practices, or any element involved in the management of products and services
- commitment and practice of continual improvement should be engrained into everything an organization does, aligning with its culture and strategy

Key activities that are part of continual improvement practices include:

- encouraging continual improvement across the organization
- securing time and budget for continual improvement
- identifying and logging improvement opportunities
- assessing and prioritizing improvement opportunities
- making business cases for improvement action
- planning and implementing improvements
- measuring and evaluating improvement results
- coordinating improvement activities across the organization

The ITIL SVS includes the continual improvement model, which can be applied to any type of improvement, from high-level organizational changes to individual services and configuration items (CIs).

- There can be different techniques employed to do just that, eliminating waste, working holistically and ensuring improvements work at all levels of the organization

Approaches to continual improvement can be found in many places:

- SWOT analysis
- Balanced scorecard review
- Internal and external assessments and audits
- Lean methods provide perspectives on the elimination of waste

## *IT Service Management Simple (for real)*

- Agile methods focus on making improvements incrementally
- DevOps methods work holistically

Although there are several methods available, organizations should not try to formally commit to too many different approaches.

- Continual improvement is everyone's responsibility
- Although there may be a group of staff members who focus on this work full-time, it is critical that everyone in the organization understands that active participation in continual improvement activities is a core part of their job
- A continual improvement register (CIR) is a database or structured document to track and manage improvement ideas from identification through to final action (basically, a backlog)
- The continual improvement practice is integral to the development and maintenance of every other practice as well as to the complete lifecycle of all services and indeed the SVS itself, continually improving via:
  - planning activities, methods and techniques
  - improving resources, management at all levels
  - engage/design/transition continual improvement applying them at all activities of value chain

More specifically:

- Plan
  - Apply the practice to all planning activities, methods, and techniques
- Improve
  - Is the key activity of SVC
- Engage
  - Focuses on improving engagement approaches and practices
- Design & Transition
  - Focuses on improving the approaches and practices involved in design, develop & transitioning
- Obtain / Build
  - Focuses on improving the approaches and practices of obtain
- Deliver & Support
  - Focuses on improving the approaches and practices of operation, management & maintenance

Information security management has two main purposes:

- Protect the information needed by the organization to conduct its business
- Understanding and managing risks to the confidentiality, integrity, and availability of information

The required security is established by means of policies, processes, behaviours, risk management, and controls, which must maintain a balance between:

- Prevention: Ensuring that security incidents don't occur
- Detection: Rapidly and reliably detecting incidents that can't be prevented
- Correction: Recovering from incidents after they are detected

Other things to note:

- It is also essential to balance protecting the organization from harm and allow it to innovate
- Information security controls should consider all aspects of the organization and align with its risk appetite
- Information security management interacts with every other practice
- It creates controls that each practice must consider when planning how work will be done
- It depends on other practices to help protect information
- It must be driven from the most senior level in the organization
- Most organizations have a dedicated information security team, carrying out risk assessments
- In high-velocity environments, information security is integrated into the daily work of development and operations
- Information Security is critically dependent on the behavior of people throughout the organization
- Staff who have been trained well and pay attention to Information Security policies and other controls can help to detect, prevent, and correct Information Security incidents
- Poorly trained or insufficiently motivated staff can be a major vulnerability

Many processes and procedures are required to support information security management:

- an information security incident management process
- a risk management process
- a control review and audit process
- an identity and access management process
- event management
- procedures for penetration testing, vulnerability scanning, etc.
- procedures for managing information security related changes



There is a contribution of information security management to the service value chain, with the practice being involved in all value chain activities:

- Plan: Considered in all planning activity and must be built into every practice and service
- Improve: Considered in all improvement value chain activity to ensure that vulnerabilities are not introduced when making improvements
- Engage: Information security requirements for new and changed services must be understood and captured
- Design and transition: Information security must be protected with effective controls being designed and transitioned into operation, considering safety, security and warranty requirements
- Obtain/build: Information security must be built into all components, based on policies and procedures, applying to all components
- Deliver and support: Detection and correction of information security incidents must be an integral part of this value chain activity

Knowledge management has the purpose to maintain and improve the effective, efficient, and convenient use of information and knowledge across the organization.

It follows a structured approach:

- Defining
- Building
- Re-using
- Sharing

Knowledge is one of the most valuable assets of an organization, because it's not simply information, but the use of information in the right context.

- This needs to be understood with both the user of the knowledge and the relevant situation in mind
- A better example of knowledge that is fit for purpose might be a simplified set of instructions or reference points
- Knowledge management aims to ensure that stakeholders get the right information, in the proper format, at the right level, and at the correct time, according to their access level and other relevant policies

Consider the DIKW (Data - Information - Knowledge - Wisdom) model used to hierarchically describe how to get value from data, describing their relationships:

- Typically information is defined in terms of data, knowledge in terms of information, and wisdom in terms of knowledge
- Timeline from past to future

Also, knowledge management has different contributions to the service value chain:

- Plan: Knowledge management helps the organization to make sound portfolio decisions and to define plans
- Improve: This value chain activity is based on an understanding of the current situation, providing context for situations and plans
- Engage: Relationships at all levels are based on an understanding of the context and knowledge management helps to better understand stakeholders
- Design and transition: Knowledge of the solutions and technologies available, and the re-use of information, can make this value chain activity more effective.
- Obtain/build: The efficiency of this value chain activity can be significantly improved with sufficient knowledge of the solutions and technologies available, and through the re-use of information
- Deliver and support: Ongoing value chain activity in this area benefits from knowledge management through re-use of solutions and a better understanding of the context of non-standard situations that require analysis

Measurement and Reporting has the purpose to support good decision-making and continual improvement by decreasing the levels of uncertainty.

- This is achieved through the collection of relevant data on various managed objects and the valid assessment of this data in an appropriate context
- This is achieved through the collection of relevant data on various managed objects and the valid assessment of this data in an appropriate context, using metrics like the following:
  - Critical Success Factor (CSF)
    - A necessary precondition for the achievement of intended results
  - Key Performance Indicator (KPI)
    - An important metric used to evaluate the success in meeting an objective
    - KPIs for individuals can work as a competitive motivator, and this will drive positive results if the KPIs are set to meet clear business goals, but also a negative side, bringing inappropriate behaviors
    - Operational KPIs should ideally be set for teams rather than focusing too closely on individuals. This means that there can be some flexibility in the targets and behaviours allowed by the team as a whole

Data collected as metrics is usually presented in the form of reports or dashboards.

- It is important to remember that reports are intended to support good decision-making, so their content should be relevant to the recipients of the information and related to the required topic
- Reports and dashboards should make it easy for the recipient to see what needs to be done and then take action

Of course, this has different contributions for the service value chain:

- Plan: Measurement and reporting enables strategy decisions by providing details on current performance of products and services
- Improve: Performance is constantly monitored and evaluated to support continual improvement, alignment, and value creation
- Engage: Engagement with stakeholders is based on correct, up-to-date, and sufficient information
- Design and transition: Measurement and reporting provides information for management decisions at every stage before going live
- Obtain/build: The practice ensures transparency of all development and procurement activities, enabling effective management and integration with all other value chain activities
- Deliver and support: Ongoing management of products and services is based on correct, up-to-date, and sufficient performance information

Organizational change management has the purpose to ensure that changes in an organization are smoothly and successfully implemented, and that lasting benefits are achieved by managing the human aspects of the changes.

- Improvements invariably require people to change the way they work, their behaviour, and sometimes their role
- The organizational change management practice aims to ensure that everyone affected by the change accepts and supports it, removing or reducing resistance to the change and ensuring successful transitions
- According to the model of the five stages of grief (or the Kübler-Ross model), those experiencing grief go through five emotions: denial, anger, bargaining, depression and acceptance. This is used to represent how the morale of people in the company can make a difference to the overall production
- Also the ADKAR model, outcome-oriented change management method that aims to limit resistance to organizational change based on: Awareness, desire, knowledge, ability, reinforcement

Organizational change management must ensure that the following are established and maintained throughout the change:

- Clear and relevant objectives
- Strong and committed leadership
- Willing and prepared participants
- Sustained improvement

Organizational change management (OCM) is different from other practices. It requires considering people's backgrounds and cultures, and ultimately the accountability lies within the organization itself, although external help can be brought in for support.

The contribution of organizational change management to the service value chain follows here:

- **Plan:** Decisions regarding change at the portfolio level cause the initiation of organizational change management to support an approved initiative
- **Improve:** Without proper organizational change management, improvement cannot be sustained
- **Engage:** The organizational change management practice actively engages with stakeholders at all stages of a change
- **Design and transition:** Organizational change management is essential for the deployment of a new service or a significant change to an existing one
- **Obtain/build:** Organizational change management ensures engagement and cooperation within and across projects
- **Deliver and support:** Organizational change management continues during live operations and support to ensure that the change has been adopted and is sustained

Portfolio management has the purpose to ensure that the organization has the right mix of programs, projects, products, and services to execute the organization's strategy within its funding and resource constraints.

It achieves this through the following activities:

- Developing and applying framework to define and deliver portfolios
- Defining products and services for the achievement of agreed outcomes
- Evaluating and prioritizing incoming change initiatives
- Implementing investment and decision-making process based on understanding
- Analysing and tracking investments based on the value
- Monitoring the performance of the overall portfolio and proposing adjustments
- Reviewing the portfolios

Portfolio management encompasses a number of different portfolios:

- *Product/service portfolio:* The product/service portfolio is the complete set of products and/or services that are managed by the organization, and it represents the organization's commitments and investments across all its customers and market spaces
  - Service portfolio represents the commitments and investments made by a service provider across all customers and market spaces
- *Project portfolio:* it is used to manage and coordinate projects that have been authorized, ensuring objectives are met within time and cost constraints and to specification
- *Customer portfolio:* this is used to record all the organization's customers and is the relationship manager's view of the internal and external customers who receive products and/or services from the organization

The outcomes for existing services falls into six categories:

- Renew: these services meet functional fitness criteria but fail technical fitness
- Replace: these services have unclear and overlapping business functionality
- Retain: largely self contained, with well defined asset, process and system boundaries
- Refactor: often services that meet the technical and functional criteria of the organization have confused or inconsistent process or system boundaries
- Retire: services that do not meet minimum levels of technical and functional fitness. Retirement is an often overlooked investment
- Rationalise: often organisations discover they are offering services that are composed of multiple multiple versions of the same software

Here we show the contribution of portfolio management to the service value chain:

- Plan: Portfolio management provides important information about the status of projects, products, and services, which is essential for planning and also for reviewing
- Improve: Portfolio management identifies opportunities to improve efficiency and increase collaboration, eliminate duplication between projects, and identify and mitigate risks, prioritizing improvement
- Engage: When opportunities or demand are identified by the organization, the decisions on how to prioritize these are made based upon the organization's strategy plus the risk assessment and resource availability
- Design and transition, obtain/build, and deliver and support: Portfolio management is responsible for ensuring that products and services are clearly defined and linked to the achievement of business outcomes, making activities aligned

Project management has to ensure that all projects in the organization are successfully delivered. This is achieved by planning, delegating, monitoring, and maintaining control of all aspects of a project, and keeping the motivation of the people involved.

- Projects are one of the means by which significant changes are introduced to an organization, which can be a stand-alone initiative or part of a larger programme
- There are different approaches to the way in which projects are delivered:
  - Waterfall method
  - Agile method
  - Mixed
    - ISO 21500, PMI, PRINCE 2
    - several types of Agile (Kandan, Scrum, XP, Crystal, DSDM, FDD, SAFe, etc.)

The contribution of project management to the service value chain follows:

- Plan: Project management supports strategic and tactical planning with methods and tools
- Improve: Many improvement initiatives are large and complex, so project management is the relevant practice to manage them
- Engage: Stakeholder engagement is a key element in the successful delivery of any project
- Design and transition: Design of a practice or service can be managed as a project or an iteration in a larger project
- Obtain/build: Obtaining new resources as well as development and integration is usually performed as a project. Various project management techniques are applicable to this activity
- Deliver and support: The design, transition, and handover to internal or external service consumers for operational management needs to be well planned and executed to ensure that business as usual is not compromised

Relationship Management has the purpose to ensure engaging and establishing the relationship with all the stakeholders at all levels, right from strategic to tactical levels.

- This includes the customer, supplier, partner, and functions within the organization
- It includes the identification, analysis, monitoring, and continual improvement of relationships with and between stakeholders
- The relationship management practice ensures that:
  - Stakeholders' needs and drivers are understood
  - Products and services are prioritized appropriately
  - Stakeholders' satisfaction is high
  - Customers' priorities
  - Any stakeholders' complaints and escalations are handled well through a sympathetic process
  - Products and services facilitate value creation for the service consumers and the organization
  - The organization facilitates value creation for all stakeholders
  - Conflicting stakeholder requirements are mediated appropriately

The contribution of relationship management to the service value chain follows:

- Plan: Information about the requirements and expectations, assessment and prioritization across portfolios and evaluating current and future market spaces
- Improve: Harmonize and synergize different organizational relationships with internal and external customers
- Engage: Engaging with internal and external customers to understand their requirements and priorities

- Design and transition: Plays a key role in coordinating feedback from internal and external customers, ensures that inconvenience and adverse impacts to customers during transition are prevented or minimized
- Obtain/build: Provides the customer requirements and priorities to help select products, services or service components to be obtained or built
- Deliver and support: Responsible for ensuring that a high level of customer satisfaction and a constructive relationship

Risk management practice has the purpose to ensure that the organization understands and effectively handles risks. Managing risk is essential to ensuring the ongoing sustainability of an organization and creating value for its customers.

- Risk is normally perceived as something to be avoided because of its association with threats, and although this is generally true, risk is also associated with opportunity. Failure to take opportunities can be a risk in itself
- The organization's portfolio can be mapped to an underlying portfolio of risks to be managed. When service management is effective, products and services in the service catalogue and pipeline represent opportunities to create and capture value for customers

For risk management to be effective, risks need to be:

- Identified: Uncertainties that would affect the achievement of objectives must be considered and then described to ensure that there is common understanding
- Assessed: The probability, impact, and proximity of individual risks must be estimated so they can be prioritized and the overall level of risk understood
- Treated: Appropriate responses to risks must be planned, assigning owners and actionees, and then implemented, monitored, and controlled

There are guidelines given by *ISO 31000:2018 Risk Management*:

- These provide an overall and general perspective of the purpose and principles of risk management
- They are applicable at all levels in any type of organization
- ISO 31000 states that "the purpose of risk management is the creation and protection of value" and that risk management "improves performance, encourages innovation and supports the achievement of objectives"

There are other companies between risk analysis and risk management:

- CCTA: The United Kingdom's Central Computer and Telecommunications Agency
- CRAMM: CCTA Risk Analysis and Management Method

The contribution of risk management to the service value chain is disposed this way:

- Plan: Risk management provides essential inputs to the organization's strategy and planning
- Improve: All improvement initiatives should be assessed and continually controlled by risk management, establishing reviews and plans

### *IT Service Management Simple (for real)*

- Engage: The risk management practice helps to identify key stakeholders and optimize engagement based on such information as risk appetite and profiles
- Design and transition: Products and services should be designed to address prioritized risks
- Obtain/build: Risk management should inform decisions about the obtaining or building of products, services, or service components
- Deliver and support: Risk management helps to ensure that the ongoing delivery of products and services is maintained at the agreed level and that all events are managed

Service Financial Management has the purpose to support the organization's strategies and plans for service management by ensuring that the organization's financial resources and investments are being used effectively.

It is responsible for managing activities of an organization:

- Budgeting
- Costing
- Accounting
- Charging

Finance is the common language which allows the organization to communicate effectively with its stakeholders. It is responsible for managing the budgeting, costing, accounting, and charging for the activities of an organization, acting as both service provider and service consumer:

- Budgeting/costing: This is an activity focused on predicting and controlling the income and expenditure of money within the organization, accomplishing objectives
- Accounting: This activity enables the organization to account fully for the way its money is spent, allowing it to compare forecast vs actual costs and expenditures
- Charging: This activity is required to formally invoice service consumers (usually external) for the services provided to them

It needs to be considered *accounting*, which charts accounts:

- Service Financial Management needs to align the chart of accounts with its own cost models, services and expenditure
- More IT organizations are creating their own charts of accounts and then aligning them with the enterprise chart of accounts

The contribution of service financial management to the service value chain involves the following:

- Plan: Plans at all levels need funding based on information, including financial
- Improve: All improvements should be prioritized with return on investment in mind
- Engage: Financial considerations are important for establishing and maintaining service relationships with service consumers, suppliers, and partners



### *IT Service Management Simple (for real)*

- Design and transition: Service financial management helps to keep this activity cost-effective by providing the means for financial planning and control
- Obtain/build: Obtaining resources of all types is supported by budgeting (to ensure sufficient funding) and accounting (to ensure transparency and evaluation)
- Deliver and support: Ongoing operational costs are a significant part of the organization's expenditures. Service financial management helps to ensure sufficient understanding of both

Strategy Management has the purpose of formulating the goals of the organization and adopt the courses of action and allocation of resources necessary for achieving those goals.

- It establishes the organization's direction, focuses effort, defines or clarifies the organization's priorities, and provides consistency or guidance in response to the environment
- It is often seen as the responsibility of the senior management and governing body of an organization

The objectives of strategy management are to:

- analyse the environment to identify opportunities
- identify constraints and define how they could be removed
- decide and agree the organization's perspective and direction
- establish the perspective and position of the organization relative to its customers and competitors
- ensure that the strategy has been translated into tactical and operational plans
- ensure the strategy is implemented through execution of the strategic plans
- manage changes to the strategies ensuring that strategies keep pace with changes

The contribution of strategy management to the service value chain involves the following:

- Plan: Strategy management ensures that the organization's strategy has been translated into tactical and operational plans for each organizational unit
- Improve: Strategy management provides strategy and objectives to be used to prioritize and evaluate improvements
- Engage: When opportunities or demand are identified by the organization, the decisions about how to prioritize these are based upon the organization's strategy plus the risk assessment and resource availability
- Design and transition, obtain/build, and deliver and support: Strategy management ensures the strategy is implemented through execution of the strategic plans in coordination with these activities

Supplier management has the purpose to ensure the management of supplier and their performance to support the seamless provisioning of quality products, services and components.

This includes creating closer, more collaborative relationships with key suppliers to uncover and realize new value and reduce the risk of failure.

## *IT Service Management Simple (for real)*

Activities that are central to the practice include:

- Creating a single point of visibility and control to ensure consistency
- Maintaining a supplier strategy, policy, and contract management information
- Negotiating and agreeing contracts and arrangements
- Managing relationships and contracts with internal and external suppliers
- Managing supplier performance

The contribution of supplier management to the service value chain involves the following:

- Plan: Provides approved sourcing strategy and plan
- Improve: Identifies opportunities for improvement
- Engage: Responsible for engaging with all suppliers and for the evaluation and selection of suppliers
- Design & Transition: Responsible for defining requirements for contracts and agreements related to new or changed products or services
- Obtain & Build: Supports the procurement or obtaining of products, services, and service components from third parties
- Deliver & Support: Ensure that suppliers meet the terms, conditions, and targets of their contracts and agreements

Also:

- There are different activities: supplier planning, evaluation of suppliers and contracts, supplier and contract negotiation and management, warranty/performance management and contract renewal.
- Suppliers should be selected according to the importance and impact, risk and costs
- There are different types of supplier relationships between an organization and its suppliers

Workforce and Talent Management has the purpose to ensure that the organization has the right people with the appropriate skills and knowledge and in the correct roles to support its business objectives.

The practice covers a broad set of activities focused on successfully engaging with the organization's employees and people resources, including planning, recruitment, onboarding, learning and development, performance measurement, and succession planning.

There are several *definitions* to use here:

- Organizational velocity - The speed, effectiveness, and efficiency with which an organization operates. Organizational velocity influences time to market, quality, safety, costs, and risks
- Competencies - The combination of observable and measurable knowledge, skills, abilities, and attitudes that contribute to enhanced employee performance and ultimately result in organizational success
- Skills - A developed proficiency or dexterity in thought, verbal communication, or physical action

### *IT Service Management Simple (for real)*

- Ability - The power or aptitude to perform physical or mental activities related to a profession or trade
- Knowledge - The understanding of facts or information acquired by a person through experience or education; the theoretical or practical understanding of a subject
- Attitude - A set of emotions, beliefs, and behaviours towards a particular object, person, thing, or event

The activities of this practice cover a broad range of areas and are performed by a variety of roles for specific purposes, including:

- Workforce planning
- Recruitment
- Performance measurement
- Personal development
- Learning and development
- Mentoring and succession planning

The contribution of workforce and talent management to the service value chain has the following:

- Plan: Workforce planning is a specific output of this value chain activity, as leadership and management evaluate their current organizational capabilities in relation to future requirements
- Improve: All improvements require sufficiently skilled and motivated people
- Engage: Workforce and talent management is closely linked to this value chain activity
- Design and transition: Talent management is important to this value chain activity
- Obtain/build: Talent management focuses specifically on knowledge, skills, and abilities related to collaboration, customer focus, quality, speed, and cost management
- Deliver and support: Specific focus by talent management is given to knowledge, skills, and abilities related to customer service, performance management, and customer interactions and relationships

## **12. 12 - Service Management Practices**

A lot of budget is usually spent on maintaining the current infrastructure, being sure the whole infrastructure is always ready to work and to function correctly.

There are 17 practices basically covering all business areas and this will be explained. One note: the order the professor uses in slides is different and sparse compared to the one in the book. I will use the professor order here.

Monitoring and event management has the purpose to ensure the services and service components are observed systematically, detect & report the change of state which has significance to service, service performance, and contribution to the business.

- This practice identifies and prioritizes infrastructure, services, business processes, and information security events, and establishes the appropriate response to those events, including responding to conditions that could lead to potential faults or incidents

We describe the event as any change of state that has significance for the management of a service or other configuration item (CI).

- Events are typically recognized through notifications created by an IT service, CI, or monitoring tool
- Manages events throughout their lifecycle to prevent, minimize, or eliminate their negative impact on the business

About monitoring:

- Focuses on the systematic observation of services and the CIs that underpin services to detect conditions of potential significance
- Monitoring should be performed in a highly automated manner and can be done actively or passively
- Monitoring is necessary for event management to take place, but not all monitoring results in the detection of an event

About events:

- Events are often classified as informational, warning, and exceptions
- Informational events do not require action when they are identified
- Warning events allow action to be taken before the business experiences any negative impact
- In contrast, exception events indicate that a breach of an established norm has been identified
- Exception events require action, even though business impact may not yet have been experienced

About activities to do:

- Identifying what services, systems, or other service components should be monitored
- Implementing and maintaining monitoring
- Establishing and maintaining thresholds and other criteria for determining which changes of state will be treated as events

### *IT Service Management Simple (for real)*

- Establishing and maintaining policies for how each type of detected event should be handled to ensure proper management
- Implementing processes and automations required to operationalize the defined thresholds, criteria, and policies

This practice is highly interactive with other practices participating in the service value chain.

- The correct control action will be to initiate activity in the incident management practice
- Repeated events showing performance outside of desired levels may be evidence of a potential problem, which would initiate activity in the problem management practice
- For some events, the correct response is to initiate a change, engaging the change control practice

*Organizations and people* are also critical to appropriately responding to monitored data and events aligned with policies and organizational priorities.

- Roles and responsibilities must be clearly defined, and each person or group must have easy, timely access to the information needed to perform their role
- Automation is key to successful monitoring and event management
- The monitoring itself can be either active or passive
- In active monitoring, tools will poll key CIs, looking at their status to generate alerts when an exception condition is identified
- In passive monitoring, the CI itself generates the operational alerts

*Automated tools* should also be used for the correlation of events.

- These features may be provided by monitoring tools or other tools such as ITSM workflow systems
- There can be a huge volume of data generated by this practice, but it will be of no value without clear policies and strategies on how to limit, filter, and use this data
- Don't ask for data that is not truly needed, but if data is required, make sure that the provision of that data is explicitly part of the contract for the supplier's services

Remember:

- event management is focused on generating and detecting notifications about the status of IT infrastructure and services. It works with occurrences specifically generated to be monitored
- monitoring is broader than event management and uses tools to check devices status to ensure they are operating correctly, even if not generating events. Monitoring tracks the occurrences, seeking out conditions that do not generate events

Monitoring can be:

- active
  - reactive: diagnoses devices failure, requiring knowledge of infrastructure and their mapping
  - proactive: determines real-time status of devices, ensuring all are fully recovered

## *IT Service Management Simple (for real)*

- passive
  - reactive: detect and correlate event records determining events meaning and appropriate actions, requiring detailed knowledge of operations and services
  - proactive: event records are correlated to build trends and identify patterns

There are different diagrams to understand this:

- control flow diagrams or UMLs
- processes/networks monitoring or enterprise service management software

On the service value chain:

- Plan
  - Uninvolved
- Improve
  - Essential to the close observation of the environment to evaluate and proactively improve its health and stability
- Engage
  - Essential to the close observation of the environment to evaluate and proactively improve its health and stability
- Design & Transition
  - Monitoring data informs design decisions
  - Monitoring is an essential component of transition
- Obtain / Build
  - Supports development environments, ensuring their transparency and manageability
- Deliver & Support
  - The practice guides how the organization manages internal support of identified events, initiating other practices as appropriate

Incident management has the purpose of minimalizing the negative impact of incidents by restoring normal service operation as quickly as possible.

We can describe an incident as the unplanned interruption to a service or degradation of the service performance or quality.

- Some organizations use a technique called *swarming* to help manage incidents. This involves many different stakeholders working together initially, until it becomes clear which of them is best placed to continue and which can move on to other tasks
  - Solving incidents relies heavily on collaboration and information sharing

### *IT Service Management Simple (for real)*

- Incidents may be diagnosed and resolved by people in many different groups, depending on the complexity of the issue or the incident type:
  - Some incidents will be resolved by the users themselves, using self-help
  - Some incidents will be resolved by the service desk
  - More complex incidents will usually be escalated to a support team for resolution
  - Incidents can be escalated to suppliers or partners
  - The most complex incidents, and all major incidents, often require a temporary team to work together to identify the resolution
  - In some extreme cases, disaster recovery plans may be invoked to resolve an incident

The management involves identifying:

- Classification
  - Classifying means assigning Priority and Category
- Priority
  - The SD determines the priority of incidents as soon as they are received
  - The priority is established according to the criteria described in the SLA
  - The priority is calculated on the basis of impact and urgency
- Impact
  - effect that the incident has on business activities
- Urgency
  - speed at which the incident must be resolved

The Impact is always intended as Business Impact:

- Critical period (i.e. night or day?)
- Critical applications
- Number of users
- Etc.

When determining the priority, the following must be considered:

- The potential costs of non-resolution
- The threat of harm to customers and staff
- The legal implications
- The “nuisance” caused to customers and staff

The impact is not related to the technical complexity of the resolution. This can be classified in tables, seeing clearly impact, priority codes, descriptions and target resolution time.

There are the following functions:

- Hierarchical Escalation = Inform / Support
- Functional Escalation = Knowledge

Particularly:

- Escalation and Referral NEVER turn an incident into a problem, even when the owner of an incident speaks to the PM for administrative reasons, and the PM should proceed with the identification of an associated problem
- Problems are *not* serious accidents
- We can use workflow and UMLs to understand the specific procedures to handle incidents

There is also *incident matching*:

- open incidents/deal with problems/work with errors and find workarounds
- find incidents related to those and activate procedure to act efficiently and escalate as quickly as possible, ensuring incidents are investigated for resolution and developing service desk
- these ones have incident matching workflows too

Incident management makes the following contributions to the service value chain:

- Improve: improvement by reducing the incident resolution time, improving the user experience, etc.
- Engage: Engaging, coordination & communication with the users and subject matter expertise
- Design and transition: Resolving the incident which would occur during the design and transition
- Obtain/build: Resolving the incident which would occur in the development environment
- Deliver and support: Identifying and resolving the incidents

Service Request Management has the purpose to support the agreed quality of the service by handling the pre-defined user requests, which are initiated by users in a professional and friendly manner.

We define a service request as a request from a user or a user's authorized representative that initiates a service action which has been agreed as a normal part of service delivery

Each service request may include one or more of the following:

- a request for a service delivery action (for example, providing a report or replacing a toner cartridge)
- a request for information (for example, how to create a document or what the hours of the office are)
- a request for provision of a resource or service (for example, providing a phone or laptop to a user, or providing a virtual server for a development team)
- a request for access to a resource or service (for example, providing access to a file or folder)



### *IT Service Management Simple (for real)*

- feedback, compliments, and complaints (for example, complaints about a new interface or compliments to a support team)

Fulfilment of service requests may include changes to services or their components; usually these are standard changes. Service requests are a normal part of service delivery and are not a failure or degradation of service, which are handled as incidents.

- Some service requests require authorization according to financial, information security, or other policies, while others may not need any
- Since service requests are pre-defined and pre-agreed as a normal part of service delivery, they can usually be formalized, with a clear, standard procedure for initiation, approval, fulfilment, and management

*Service request catalog* is a crucial part for the implementation of the process is the definition of the requests for an accurate planning of the supply processes for each type of request (Service Request Catalog).

In particular, use the following:

- Use automation to the greatest degree possible
- Seek out opportunities for improvement
- Create appropriate policies to limit, remove, and minimize the need for additional approvals
- Redirect incidents and problems to the appropriate practices
- Optimize then automate & Manage expectation
- Leverage existing workflow models

Service request management makes the following contributions on the service value chain:

- Improve: Provide users a channel for improvement initiatives, compliments, and complaints
- Engage: Provides regular communications to help set expectations
- Design and transition: Standard changes are used to initiate and fulfill service requests
- Obtain/build: Acquiring the services components required for fulfillment of service requests
- Deliver and support: Service request management makes a significant contribution to normal service delivery

Problem management has the purpose to identify the potential & actual causes of incidents and reduce the probability of the impacts of incidents by providing the solutions and workarounds, including the creation of known errors.

We can distinguish here:

- Problem
  - A cause, or potential cause, of one or more incidents

## *IT Service Management Simple (for real)*

- Given everything may have errors, we need ways to identify, log problems and controlling them, while prioritizing all the activities
- Incidents are usually interrelated between them and have complex relationships, contributing to incidents duration and impact
- Known error
  - A problem that has been analyzed and has not been resolved
- Workaround
  - A solution that reduces or eliminates the impact of an incident or problem for which a full resolution is not yet available
  - These can be created at any stage and they are documented

Problem Management involves three distinct phases:

- Problem identification
  - Identify and log problems, according to trends, issues, information from internal and external sources
- Problem control
  - It should consider all contributory causes, including causes that contributed to the duration and impact of incidents
- Error control
  - Its activities manage known errors, which are problems where initial analysis has been completed; it usually means that faulty components have been identified
  - It regularly re-assesses the status of known errors not yet resolved

Problems are prioritized for analysis based on the risk that they pose, and are managed as risks based on their potential impact and probability.

Problem management activities are very closely related to incident management. The practices need to be designed to work together within the value chain. The responsibilities of this practice can be summarized as follows (subprocesses):

- Problem control
- Error control
- Assist with handling of major incidents
- Proactive prevention
- Management information
- Completing major problem reviews

There are so many problem analysis techniques one can use for example the Pareto principle:

### *IT Service Management Simple (for real)*

- It follows the 80/20 rule, where typically 20% of problems account for 80% of the impact or occurrences
- By creating a Pareto chart and identifying the “vital few” categories, organizations can focus their efforts on resolving the most significant problems first

Problem management goes from reactive to proactive (starting from left to right):

- Prevention of problems on other systems and applications
- Monitoring of ChangeManagement
- Initiating changes to combat:
  - 1.Occurrence of incidents
  - 2.Repetition of incidents
- Identification of trends
- Problem identification – Problem diagnosis
- Supplying 2°/3° line incident support

The *Proactive Control Management* sub-process carries out those activities aimed at identifying and resolving problems before they can cause incidents. These activities are:

- Trend Analysis
  - Incident and problem reporting can provide information for preventive measures to improve service quality
  - Incident and problem analyzes can identify trends such as:
    - The occurrence of a certain type of problem as a result of a change
    - The beginning of a certain type of anomaly or malfunction
    - The repetition of particular incidents and problems with some CIs in particular
    - The need to train the staff or the customer
- Targeting Support Action
  - Trend Analysis can lead to the identification of faulty parts in the IT infrastructure, which can then be analyzed and corrected
  - It can also lead to the identification of problem areas that need more attention from the support
- Informing the organization
  - Problem Management can provide information about problems, KEs and RFCs issued
  - This helps to determine the health of the business and the details can be used to inform the “decision making” processes within the organization and other practices such as Service Level Management and Service Desk

By redirecting the efforts of an organization from reactive towards a large number of preventative incidents, an organization provides a better service to its customers and makes the use of available resources within the IT support organization more effective and efficient.

The benefits of a formal approach to Problem Management include:

- Improvement of the quality of IT service
  - The PM helps to create a cycle of rapid increase in the quality of IT service, and is good for the productivity and mood of those who provide the IT service
- Reduction in the volume of accidents
  - PM contributes to reducing the number of incidents that disrupt the conduct of business
- Permanent solutions
  - There is a gradual reduction in the number and impact of Problems and KEs once those solved remain solved
- Improvement of the level of learning at the organizational level
  - The PM process is based on the concept of learning from past experiences. The process provides historical data to allow the identification of trends, a means of preventing failures and reducing the impact of these, resulting in improved user productivity
- Greater number of fixes working since the first time available to the SD
  - The PM provides the SD with more incident fixes that work on the first try thanks to the information-based process of the CMDB

Problem management gives the following contributions to the service value chain:

- Improve: Provides an understanding of how to reduce incidents and their impact
- Engage: Involving the required stakeholders for problem prioritization and resolution
- Design & Transition: Providing the information that will help in improved testing and knowledge transferring
- Obtain / Build: Managing the product defects identified by problem management
- Deliver & Support: Preventing recurrence of incidents and supporting timely incident resolution

With ITIL 4, change management became change enablement. This practice has the purpose to balance the need to make beneficial changes that will deliver additional value with the need to protect customers and users from the adverse effect of changes.

- On book, you will find this one as change control, which purpose s to maximize the number of successful service and product changes by ensuring that risks have been properly assessed, authorizing changes to proceed, and managing the change schedule

We can define the change as the addition, modification, or removal of anything that could have a direct or indirect effect on services.

Consider the 7 Rs 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?

Some use cases:

- Change follows an emotional cycle of sorts: goes from shock, up to avoidance and self-blame, then goes up again towards optimum performance
- Change can also be represented by a so-called RACI (Responsible, Accountable, Consulted, and Informed) Matrix, understanding for each the responsibility, the role and what can be actually done to drive change.
- Service transition in outsourcing follows different phases: Plan service transition / Perform (Do) / Review (Check) / Close (Act)
- Through processes, this practice might follow a parallel path, in which different activities intersect and go towards common outputs
- We many classify change according to their priority (immediate/high/medium/low), corrective change and enhancement change

There are three types of change that are each managed in different ways:

- Standard: Low-risk changes, fully documented, frequent, straightforward, with full risk assessment available to use each time we implement such
- Normal: They need to be scheduled, assessed and authorized. There can be change models based on the type of change, determining the roles for assessment and authorization, using automation to speed up the change. They may have a pipeline for CI (Continuous Integration) and they need to be authorized upfront
- Major: They are higher risk and need detailed report in order to handle them well. These require management authorization for intervention
- Emergency: Changes that must be implemented as soon as possible; for example, to resolve an incident or implement a security patch. They need to have a flexible pool of approvers and they have to be implemented quickly (not mandatorily be in a schedule)

Some other useful terms:

- Change Schedule (CS) (formerly the ITIL v2 Forward Schedule of Change (FSC))
  - it contains the details of all the changes authorized for implementation, accompanied by the expected dates

- Projected Service Outage (PSO)
  - contains the details of the changes according to the SLAs and the agreed maintenance windows, the planned downtime also for other reasons such as maintenance or data backup
- Change Authority
  - a person or group responsible for authorizing a change
- Change Advisory Board (CAB)
  - The CAB is not static but can change according to the level of risk to which the change is subject
  - This role authorizes the previous categories of risk defined
  - Change management follows flows, in which communications/actions/decisions need to be escalated according to the situation and authority and level of risk/impact. They change according to the kind of request

Change enablement makes the following contributions to the service value chain:

- Plan: Modeling the change control for changes to process, products, service portfolio etc. at all levels
- Improve: Improvement of change control practices, i.e., the way change is being handled
- Engage: Engaging with the stakeholders required for execution, informing, consulting etc. while doing the change
- Design & Transition: Defining & transitioning the change
- Obtain / Build: Acquiring & building the service components required for proposed change
- Deliver & Support: Informing, coordinating, communicating, monitoring the changes & its impacts, before and after the execution of change

## 13. In-depth 1: Software Asset Management (SAM)

Software Asset Management (SAM) is all of the infrastructure and processes necessary for the effective management, control and protection of the software assets throughout all stages of their lifecycle.

- SAM includes cost, budget, strategy, and decision making in the acquisition, use, and disposal of software resources, whether internal or external, on-premises or in the cloud
- SAM is more tactical in nature, as it focuses on balancing and accounting for software licenses and agreements purchased in addition to the software in use
- We have to consider all aspects all in together; practice, partners, technology and competence, understanding how all stakeholders interact between each other

How do SAM challenges start?

- How many people do actually read the conditions before agreeing them?
- How to manage data and how to determine expected deployment positions? Who will be the users?

At a high-level, we can determine these three:

- 1. Determine Effective Deployment Position
- 2. Determine Effective License Position
- 3. Translate licenses in usage rights

The company holding the software tries to maximize revenues having different licenses schemas. Even for very simple apps, this can get difficult:

- application with its server + multiplexing for all devices
- core for each single service and application and each with its license

This needs to be regulated case by case, considering vendors can change their contract according to the specific situation. Specifically: “all of the infrastructure and processes necessary for the effective management, control and protection of the software assets throughout all stages of their lifecycle”.

Why?

- Legal and regulatory risks
  - Copyright regulations and protections
- Cost reduction
  - SAM programs can allow savings
- Asset governance
  - Software evolution and asset management
- Software audit
  - Observing and analyzing trends

## *IT Service Management Simple (for real)*

- Cost control
  - Planning budget definition, measurement

New challenges arise:

- take IT services
- make a change in the management (lob)
- go towards something new

It is based on ISO/IEC 19770. Specifically, we can describe:

- IT Asset Management standard (mostly focused on software)
  - ISO/IEC 19770-1 process framework
  - ISO/IEC 19770-2 standard for software identification tags (“SWID”)
  - ISO/IEC 19770-3 standard for software entitlements, including usage rights, limitations and metrics (“ENT”)
  - ISO/IEC 19770-4 standard for Resource Utilization Measurement (“RUM”)
  - ISO/IEC 19770-5 overview and vocabulary

The scope is the following:

- Applicable to all software
  - Executable software (applications, OS)
  - Non-executable software (fonts, audio, video, documents)
- Regardless of the technology
  - Classic, virtualized software
  - On Premise, SaaS
- Regardless of the form
  - Software, rights of use, media
  - Software and related IT assets
    - Understand if it’s applicable or not

Let’s describe its parts:

- ISO/IEC 19770-1
  - First release - 2006 (complete failure)
  - ISO/IEC 19770-1:2012
    - Market-driven



## *IT Service Management Simple (for real)*

- Simple, adaptable, fast (in return)
  - Any company, even outsourcers
  - Tiered structure
  - Each tier
    - It represents a small improvement
    - It defines SAM integration within the organization
    - It builds on the benefits and performance of the previous tiers
    - It can be certified
  - It's not a Maturity Model
    - Measurement not included
    - ISO 15504 - SPICE
  - Scope determination
    - Which assets?
    - What business parts

SAM has different tiers:

- Tier 1 - Trustworthy data
- Tier 2 - Practical management
- Tier 3 - Operational integration
- Tier 4 - Full ISO/IEC SAM integration

The framework itself translates from:

- Corporate Organization
  - Organizational processes for SAM
    - Control Environment for SAM
      - It establishes and maintains the management system within which the other SAM processes are implemented (Supervision)
    - Planning and Implementation Processes for SAM
      - They ensure the effective and efficient accomplishment of SAM management objectives (Quality - PDCA)
        - Deming Cycle - PDCA
          - It ensures maintenance and control of quality and bring standardizement over continual improvement

- Based on Plan - Do - Check - Act
- Core SAM processes
  - Inventory Processes for SAM
    - They create and maintain all stores and records for software and related assets, and provide the data management functionality which ensures the integrity of control of software and related assets in the other SAM processes (Input)
  - Verification and Compliance for SAM
    - They detect and manage all exceptions to SAM policies, processes, and procedures (including license use rights) - (It is not the vendor audit)
  - Operation Management Processes and Interfaces for SAM
    - They execute operational management functions which are essential to achieving overall SAM objectives and benefits (Non-technical management)
- Primary process interfaces for SAM
  - Lifecycle Processes Interfaces for SAM
    - They are largely aligned to the primary life cycle processes of ISO/IEC 12207 (Software Life Cycle Process) in the context of SAM as well as to ISO/IEC 20000 (IT Service Management - ITIL)
- Service Management

There is a relationship between processes and the 4 levels of ISO (for each tier, we describe how much the current tier covers the specified process):

- Tier 1 - Trustworthy data
  - Software Asset Verification = Partially covered
  - Software Asset Inventory Management = Fully covered
  - Software Asset Record Verification = Fully covered
  - Software License Compliance = Fully covered
  - Conformance Verification for SAM = Fully covered
- Tier 2 - Practical management
  - Software Asset Verification = Partially covered
  - Monitoring and review of SAM = Partially covered
  - Relationship and contract management for SAM = Partially covered
  - Financial Management for SAM = Partially covered
  - Planning for SAM = Fully covered

### *IT Service Management Simple (for real)*

- Corporate Governance Process for SAM = Fully covered
- Roles and Responsibilities for SAM = Fully covered
- Policies, Processes and Procedures for SAM = Fully covered
- Competence in SAM = Fully covered
- Tier 3 - Operational integration
  - Monitoring and review of SAM = Partially covered
  - Software Asset Identification = Partially covered
  - Software Asset Security Compliance = Fully covered
  - Retirement/Acquisition/Software Development Process = Fully covered
  - Relationship and contract management for SAM = Fully covered
  - Financial Management for SAM = Fully covered
- Tier 4 - Full ISO/IEC SAM integration
  - Implementation/Monitoring and review/Continual improvement of SAM - Fully covered
  - Software Asset Verification/Control/Security Management - Fully covered
  - Change Management/Software Development/Software Release/Incident Management/Problem Management Process - Fully covered

Some key takeaways from all of this:

- SAM is all of the infrastructure and processes necessary for the effective management, control and protection of the software assets throughout all stages of their lifecycle
- SAM challenges are:
  - Nobody reads what they sign
  - Need for specific and continuously updated knowledge
  - Poor data quality (inventory and purchases)
  - License complexity (software license vs usage rights)
- SAM benefits are:
  - Risk avoidance
  - Cost Optimization
  - Asset Control
- ISO/IEC 19770 defines standard for ITAM and SAM
  - 19 processes, 8 interfaces

## *IT Service Management Simple (for real)*

- Process Framework
  - Organizational processes: Governance, Roles, Responsibility, Competence and PDCA
  - Core Processes: Inventory, Verification and Operational Management
  - Interfaces: ISO/IEC 12207 (Software Lifecycle), ISO/IEC 20000 (IT Service Management)
- 4 Tiers
  - Trustworthy data
  - Practical Management
  - Operational Management
  - Full Compliance

## **14. In-depth 2: FinOps (SAM on Cloud)**

Many factors lead companies to consider a move to the Cloud:

- Strategic changes
- Corporate reorganizations
- M&As (Merges and Acquisitions)
- Contract terms
- Product EoL products

We ask ourselves some questions:

- What are the evaluation criteria?
- How important is the price?

The price seems a certainty

- Quantitative parameter
- Measurable and comparable

But is it really a certainty?

- What cost elements were considered?
- How many companies are able to calculate the service TCO?

If the on-premise price is normally underestimated it is important to avoid overestimating the needs in terms of the Cloud. How often is the choice of Cloud plans based on the characteristics of the customer's hardware and not on real existing needs?

- Has the customer carefully sized their hardware resources?
- Did the companies that provided the software support the sizing?

Measurement is an essential activity for correct sizing:

- It allows a more correct comparison of costs
- It reduces the risk of surprises
- It makes the customer perceive a prudent investment of resources
- It supports the next steps (Design, Implementation)

Some useful data here:

- HW and SW inventory
- Effective consumption of resources
  - CPU

## *IT Service Management Simple (for real)*

- Memory
- Network
- Storage
- SW Dependencies

The cloud journey is composed of many steps:

- Consumption measurement
  - The hardware measurement for a pilot period makes it possible to precisely identify the need for resources and therefore the costs
- Cloud plan selection
  - The data collected allows us to scientifically identify the best possible cloud subscription
  - This is made upon:
    - On premise sizing
      - made on the resources currently configured in the on-premise environment
    - Resource consumption sizing
      - made on the actual (measured) usage to support consumption peaks
- Functional units definition
  - The measurement identifies the interdependencies between systems and allows to identify the blocks that should be considered and migrated atomically
- Migration plan
  - It is therefore possible to define a migration plan that includes an analytical definition of costs, priorities and activities

The consumption measurement is then made of these steps:

- Automatic scan
  - Measurement based on bots that do not require the installation of software on the measurement perimeter
  - The bot remains resident in the target server's memory for the expected measurement duration. Upon reaching the deadline, it removes itself
- Hardware measurement
  - Constant measurement of the use of hardware resources that affect cloud infrastructure costs such as: CPU, RAM, Hard Disk, Network
  - Determination of the need for performance terms such as, for example, the number of IOPS required

### *IT Service Management Simple (for real)*

- Software measurement
  - Determination of applications (DBMS, Web Server) that may require greater performance. Identification of the dependency relationships in place between the systems measured. Classification of requests on a geographical basis

Thanks to the relationship and dependency information, we can define functional units:

- set of systems can be atomically migrated to the cloud without compromising the service quality

This approach allows:

- smooth migration
- the implementation of a hybrid cloud
- no impact on costs or performance

It's possible to determine the dependency between the systems via dependency mapping, which finds the actual resource consumption:

- products installed/executed
- network connections/consumption

Migration is based on 6Rs: Refactor - Replatform - Rehost - Repurchase - Retain - Retire.

A case study to present here:

- A Virtual Server Windows-Based system
- Sizing configured in the on-premise environment and to support peak consumption