

The IT Service Management according to the ITIL framework applied to the enterprise value chain

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Abstract

The purpose of this paper is to propose an approach for implementing best practices repository of ITIL IT service management on the enterprise value chain in general. This is to make a projection of the phases and ITIL processes and their structure on the links in the value chain.

Keywords: *Best Practices, ITIL, Process, value chain, strategic alignment.*

1. Introduction

The ITIL skills base has produced good management practices for IT departments that have contributed to improving the services provided by the computing entities to their clients.

Based on our experience in implementing these processes in industry, and our experience implementing enterprise resource planning (ERP) and project management, it has proved that there is a chance that these processes can bring added value, if applied to the enterprise value chain.

Indeed, the definition of 'value chain' is; a set of functions dealing with input materials, transforming them into products or services to sell on to customers. Thus we were challenged to make analogies with the proposed ITIL phases.

This paper proposes an original approach by adopting the proposed ITIL methodology to manage enterprise value chain.

This approach should enable us to bring the power of ITIL methodology to improve the business enterprises.

2. ITIL Background

To define ITIL, one must position oneself in a context of continuous improvement of its services and referral requirements regarding both internal & external clients. ITs' concentration of efforts on customer value will contribute to a strategic alignment of IT services with the business enterprise.

ITIL is defined as a set of best practices structured as multiple processes communicating with each other. Each of these processes fulfills its role in order to meet the criterion of continuous improvement and customer satisfaction.

Best practice organizations provide a structure approved by years of experience in large companies, globally recognized for their professionalism, to formalize their processes and optimize IT service management.

3. ITIL's Vocation

Since ITIL acquires more and more ground in the market for information systems through its effectiveness and efficiency in service management, the IT policy makers

have the evidence to justify their investment in its implementation.

Indeed, it brings a pragmatic approach to address situations which CIOs are faced with, including, inter alia:

- Information technology is receiving more and more investment budget. It constitutes a significant burden for companies, especially those whose core business is not information systems.
- Information systems are increasingly complex. As long as computers have been trying to meet the requirements and demands of their individual customers, they have found themselves facing an infrastructure and a large arsenal of applications that must be managed and maintained.
- With the advent of new information technologies and communications (social networks, etc.), users have become more knowledgeable and aware of the potential of new computers. Especially since software publishers have made applications more available (The advent of open source) and increasingly complex telecommunications infrastructure (mobile phone).
- As long as companies are spending enormous sums of money on infrastructure hardware and software, leaders expect a return on their investment and are beginning to optimize their spending. It is a context that has put CIOs in a difficult situation.
- Globalization has also played its role. It has introduced chargeback services practices between subsidiaries of holding companies. This new situation has opened the eyes of CIOs who want to bill their services to their internal customers.
- The role of the CIO is becoming more ambiguous. With an operating system based on subcontracting, the user begins to ask questions about the added value of CIOs, as external vendors support their applications with levels of services that are contracted out.
- For companies specializing in IT, being certified and having certified staff improves their reputation and their clients' gains confidence that is either internal or external. This certification is a

label that the ISD can display to demonstrate their professionalism and adherence to recognized international standards.

4. The Basic Concepts of ITIL

Mainly, ITIL is based on five pillars:

- Customer care.
- The service life cycle.
- The process concept.
- Quality of service.
- Communication.

4.1 Customer care

This concept is paramount for managing IT services. It involves making the customer's needs the primary concern of the IT service provider. It should not focus on new technologies or power infrastructure. The important thing is to meet the functional needs of the customer with the most accurate and optimal solution.

Considering the business needs of the customer and placing them at the heart of the IT service management solution, should be the rationale of computing entities.

It is then essential to fully assess the client's need, which means listening to their requirements and establishing a relationship that supports the client in the expression and monitoring of these needs.

4.2 The service life-cycle

Before describing the service life cycle, the concept of service, as the ITIL repository has to be explained first.

In general, the service can be defined according to the context.

In a restaurant one can evaluate the service; smile, mood, responsiveness, etc

In a tennis match, serving the ball, triggers the game.

In an organization, a service is an organizational entity having a function and an aim, carried out by a group of people.

In the field of information systems, a service is defined as a benefit, aid or assistance that a user can expect from a supplier.

In the daily life of IT projects, and after being put into production, CIOs find themselves faced with two situations:

- Whether the operations team was involved in the project since its conception, which can generate a feeling of frustration at having operating tasks imposed on them, that don't seem to make business sense.
- Or the project team, since it has mastered the problems, continues the project in the operational phase, which can generate organizational failures and conflicts of responsibility.

To avoid this kind of anomaly, ITIL provides a solution and advocates considering management services as part of the project study phase. In this way, the overlapping roles of the project team and the operations team can be avoided and the operating team is made aware of the stakes of the project and services and the added value to the business. This allows the planning of the resources and skills required to operate the system after it has been put into production. This entails taking into consideration the impact of performance, availability and budget from the very start of the project.

The concept of life cycle provides everything needed for successful projects, considering the customer's needs until the start of production of services by the provider.

4.3 The process concept

The process concept has demonstrated its robustness in quality within the industry. ITIL has adopted this approach to structure the philosophy of its practice as multiple interacting processes.

The process concept answers questions about the sequence of activities while undergoing inspections and performance indicators to measure program output for which the process was designed.

The process owner is responsible for the design process and ensures that the process meets the need defined.

The process manager is responsible for implementation of the process, as it has been defined by the process owner.

4.4 The quality of service

This concept is the rationale for good practice. Quality of service can be defined as being the opportunity to respond to the customer needs exactly as required.

The client's belief in its supplier is based on their appreciation of their needs, delivered within the time expected, while respecting the defined specifications.

In this respect, ITIL is seeking to improve services perpetually in a manner based on the philosophy of the Deming Wheel: Plan, Do, Check, Act.

4.5 Communication

One of the contributions of ITIL is good communication. It harmonizes the language between customers and suppliers. This language removes any ambiguity when providers talk about IT's SLA, incident, problem, change, etc.

Good communication is an important component of quality of service. Business managers must understand the issues of IT, their constraints and their commitments. The communication also facilitates the negotiation of budgets, as projects arise directly from business requirements.

The communication also reflects the transparent aspect of the ISD. This is to convey a clear picture to users. A picture of the negative behavior but also, and especially, the positive aspects of service management and the efforts of its resources.

5. The morphology of ITIL V3

The heart of ITIL V3 consists of five main principles:

- Service Strategy;
- Service Design;
- Service Transition
- Service Operations;
- Continuous service improvement.

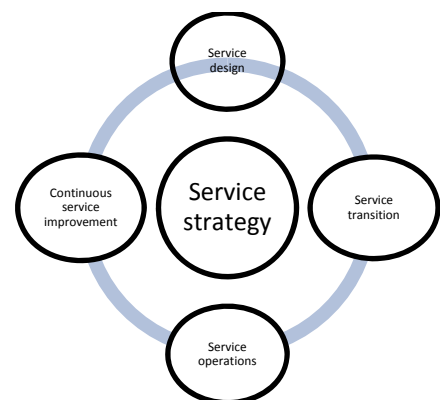


Fig1: Phases of ITIL methodology

5.1 The service strategy phase

This phase consists of the following processes:

- Strategy generation;
- Portfolio Management Services;
- Requisition Management;
- Financial Management

5.2 The design services phase

This phase consists of the following processes:

- Service Catalog Management;
- Service Level Management;
- Supply Management;
- Capacity Management;
- Availability Management;
- Business Services Continuity Management;
- Security of Information Management

5.3 The transition services phase

This phase consists of the following processes:

- Change Management;
- Service Asset management and configurations;
- Release Management and Deployment.

5.4 The operational services phase

This phase consists of the following processes:

- Incident Management;
- Problem Management;
- Ongoing Queries;
- Event Management ;
- Access Management.

And the following functions:

- Service center;
- Technical management;

- Application management;
- Operations Management.

5.5 The continuous services improvement phase

This phase consists of the improvement process in seven steps.

6. The enterprise value chain

6.1 General definition

"A value chain is the set of procedures to determine the ability of an organization to gain a competitive advantage. These steps correspond to the services of the company or arbitrarily complex collective activities that constitute the organization"

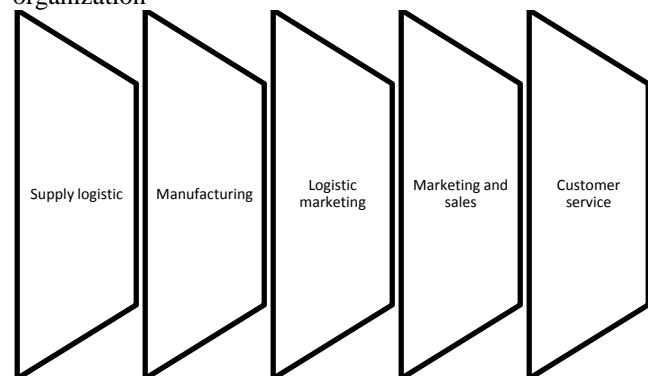


Fig2: Value chain

6.2 The different segments of a value chain

The value chain should be aware of the importance of coordination in an organization because each link in the business optimizes its added value. An analogy is made between the value chain and a macro-process representing the links between large corporate functions.

In all the activities within the chain that sells a product to a consumer, four stages can be identified:

- The first is the definition of the product, whether a product or a service. Innovation and research are key elements in this first step that contain a large share of added value to the end product.
- The second step is good manufacturing. The standardized part of this step is often outsourced and seen as having little value. The most sophisticated part is sometimes the only one remaining in the company.
- The distribution phase is increasingly integrated into process: the huge logistics warehouses that extend to the margins of large urban areas

together with workshops to finish and upgrade products in real time.

- These products are then distributed on the market, responding to the strategies defined by the company headquarters: branding, economic and financial structure of the business, legal protection, etc. A large number of activities are concerned with this last step. It conveys a value as high as the first step in that it enables the product or service produced to be sold.

According to Michael Porter, the value chain allows us to analyze the various activities of a business. It shows how each activity contributes to achieving a competitive advantage. It also assesses the costs which affect the different activities.

Nine points can be identified: five core and four support activities. Support activities may affect one or more basic activities:

- Core activities
 - Logistics Supply: Receiving, stock and distribution of commodities.
 - Manufacturing: Transforms raw materials into finished products.
 - Marketing Logistics: Collection, stock and distribute the finished product to the customer.
 - Marketing and sales: Allows consumers to find and buy the finished product.
 - Services: comprise all that can increase and maintain the value of the product (installation, repair etc.).
- Support activities
 - Firm infrastructure: Includes all necessary services for a business (administration, finance, quality control, planning etc.).
 - Human resource management: is found in all core activities.
 - Research and Development: Useful for all activities as all activities require technologies (know-how, innovation etc.).
 - Purchases: Allows core activities to acquire various resources they need.

7. Projection of ITIL methodology in value chain

Having described the structure of ITIL and the architecture of the concept of the value chain, it is clear that there is an analogy that is dealt with later in this paper. This analogy

will place the links in the value chain that can benefit from the strength of the ITIL methodology.

7.1 Component strategy analogy

Given that the strategic aspect of the value chain is devoted to studying and listening to the customer's needs and considering the market competition to define a solution that will be suitable for the customer, ITIL can provide the necessary processes for this stage of business development.

The IT service management can be extrapolated over the management of services in general.

The service in the IT direction is just one example of services that can provide each company or entity vis-à-vis their internal and external clients.

Thus, the process of defining the strategy, as outlined by ITIL, can undertake the following studies:

- Defining the market
- Develop bids
- Develop strategic assets
- Prepare for implementation

These steps are exactly as the strategic marketing guide that can conduct market research (competition and need) in order to better meet customer demands.

This process can reflect the state of mind of marketing calls and to see reality through the eyes of the customer. This answers the following questions:

- Who are our customers?
- What value do they want?
- Who depends on our services?
- How do they use our services?
- Why are our services valid?

Creating value means that the provider produces a valuable service that can meet the customer's needs and ensure the availability of the service by the concept of security.

This application is being processed by a second process, proposed by ITIL, namely demand management. This management is seen as a macro.

The process of demand management is mainly used to:

- Balance supply and demand;
- Avoid the costs associated with excess capacity that has no value;
- Prevent incidents due to insufficient capacity or quality of services.

Once the service package is defined and validated by the leaders, the role of the financial management process begins. This brings the following benefits:

- Portfolio management services;
- Financial control and compliance;
- Operational control;
- Collection and value creation;
- Decision support.

The financial management process also provides:

- Determination of the value of the service;
- Identification of the total cost of ownership to the customer and predict the financial implications of future service demands;
- Application of cost structures for comparative purposes;
- Analysis of the costs and constraints of a service to determine whether different approaches to service provision could reduce costs or improve quality;
- Business forecasting and budget control. It includes a periodic negotiation cycle to set future budgets (usually annual) and the daily monitoring and adjustment of current budgets;
- Analysis and understanding of the variables that impact on the cost of services and their sensitivity to variations.

7.2 Component manufacturing analogy

The manufacture of a product or service necessarily involves a design phase. The result of this phase, with ITIL is a document package design service:

- Document defining all aspects of a service and its requirements at all stages of its life cycle (a kind of specifications)
- Must be produced during the design phase services for:
 - New services;
 - Major changes to existing services
 - Deleting a service.
- Produce the blueprint necessary for the implementation phase.

According to ITIL, the document service package consists of :

- Requirements
 - Business requirements;
 - Applicability of the service;
 - Service contracts.
- Design Service
 - Functional requirements of the service;
 - Service level requirements;
 - Operational requirements;
 - Topology design and service.
- Assessing Readiness
 - Business benefits;
 - Financial evaluation;
 - Technical evaluation;
 - Assessment resources;
 - Organizational assessment (skills, abilities, etc.).

Lifecycle service plan

- Implementation plan of service;
- Acceptance of the operational service plan;
- Criteria for acceptance of the service.

The production service is charged to the production process, which is responsible among other things for creating, installing, testing and deploying the package into production successfully and on time

Service production must be managed according to international standards in terms of project management.

In contrast, during the design phase, ITIL can help to address these aspects by providing this state of the art service.

Processes (see above) offered to provide support to project management, and allow:

- Service level management negotiates and documentates service targets with company representatives. This is to ensure that the agreed level of service for all current services provided.
- Manage subcontractors and the services they provide to ensure the flawless quality of business services and optimize resources.
- Ensure the availability of service levels in all services provided to match or exceed the requirements agreed the current or future business and be economical.
- Support the whole process of business continuity management in ensuring that the components and technical services can be restored within the time required and agreed business.
- Align information security on Business Safety and ensure that security information is protected in all management services operations.
- Always ensure efficient resource capacity in all areas of the services provided, adapted to current and future agreed business needs.

7.3 Component distribution analogy

The component distribution is similar to the process of asset management services and configuration.

This is to record and detail the configuration of the warehouse. This process aims to:

- Identify, monitor, record, report, audit and check the configuration of services and infrastructure, including their attributes and relationships;
- Maintain accurate configuration information in the historical state of planned and existing services / infrastructure;
- Protect the integrity of assets and services configuration elements in ensuring that only authorized components are deployed.

By the notions of process and configuration management of assets include:

- Secure premises:
 - Site where the IT assets are stored
 - Define spare parts requirements
 - ✓ Secure storage of spare equipment
 - ✓ Components and assemblies of parts maintained as well as comparative systems
 - ✓ Used in a controlled manner for new systems or in case of disaster recovery
- Definitive media library:
 - Contains the final and approved versions of all media Configuration Items;
 - All have passed the quality assurance checks;
 - This is the foundation of the process of production and deployment;
 - All these elements must be referenced.

7.4 Component sales analogy

The sales component is similar to the production process. This process is the delivery of the product or service. It does not include prospecting and negotiation.

The process of asset management and configuration has the following objectives:

- Preparation of complete development plans for specific production;
- Customer satisfaction, users and Management Services staff;
- Reduce unintended incidents with services, operations and production support;
- That the service meets the new or changed service requirements agreed.

7.5 After sales service

The component after sales service is supported by an operation services phase and is composed of the following processes:

- Incident Management: It allows restoring the service or product after the start of any anomaly.
- Problem Management: It supports the resolution of unknown causes of incidents.
- Execution of Requests: It allows taking into consideration the requests from the client.
- Events management: It stores and processes all types of events that occurred regarding the services provided.
- Access Management: allows managing the allocation and management of access to services output into production.

7.6 The continuous improvement phase

This phase allows implementing an improvement process into seven stages:

- Define what you have to measure;
- Define what you can to measure;
- Collect data;
- Process data;
- Analyze data;
- Present and use information;
- Implement corrective actions.

8. Conclusion

The ITIL skills have been designed to meet a need for structuring the IT service management process. Its

philosophy has brought good results in terms of IT management and service improvement. The design of this repository also meets business functional needs as they are structured by the value chain as defined by the authors of management.

This paper proposes an approach that brings together the power and benefits of ITIL methodology and the value chain.

The proposed approach and the analogies have helped develop the processes specified by ITIL and to apply them to the links in the structure of the value chain.

This paper focused on the major stages of the value chain. It leaves the field open for researchers to enrich the application of this standard to support functions and companies' business such as finance, human resources, etc.

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