

# Using IT Management Processes for Achieving Better Efficiency in the IT Service

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**Abstract** – This article aims to give the ITIL framework objectives, structure and functionalities. It is going to explain the rapidly growing IT business needs which had caused the development of this library of good practices. The outcomes which this framework gives to the companies using it is also discussed.

**Keywords** – IT management, ITIL, integration, service transition.

## I. INTRODUCTION

During the last ten years ITIL (Information Technology Infrastructure Library) became most often used framework for managing IT processes. It contains full class with best practices which aim to support the delivery of an optimized IT service.

It provides full asset of guidelines how a certain situation about handling the IT service to be handled. This instructions are called best practices and they are based on the experience on many firms and enterprises. These practices ensure that the task is completed in the most efficient and cost effective way, that makes its resolution a part of the global strategy of the firm.

ITIL has been developed at the end of the '80s by the UK Government's Central Computer and Telecommunications Agency. Then ITIL didn't contain practices but just an asset of recommendations. Afterwards separate public and private sector organizations have started creating independent best practices sets, based on this recommendations. Until this moment there are 3 revisions created over the ITIL library: the second one was published on 2006 and the third one on June 2011.

The main subject of the all ITIL methodology is the IT service. All the practices are pointed to manage and support the IT service. The definition of service pointed in the The Official Introduction to the ITIL Service Lifecycle [1] is:

“A ‘service’ is a means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific costs and risks.”

## II. KEY PRINCIPLES OF ITIL

The primary business goal of ITIL is to support the

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company for achieving its primary business goals, by providing it with cost effective and highly productive IT environment. Following the context of this, its core principles can be summarized as follows:

- Adding value to the service
- Deliver high customer satisfaction
- Improve the usage of skills and experiences
- Improve the productivity
- Reduce the costs

ITIL is designed as a framework, which means that it provides only high level overview how the processes should follow and does not requires strict following for all of them [2]. This general rule is also being supported by the design of ITIL – it is structured in a way that allows the companies to use only the processes that they find for useful and applicable. All the processes are designed in a way that allows them to be used independently or together with the adjacent ones.

## III. ITIL COEXISTENCE WITH OTHER MANAGEMENT FRAMEWORKS

In the most of the real life scenarios, the companies use different frameworks and standardizations that interfere in between. This mixture is needed for achieving the full asset of functions, necessary for the particular IT infrastructure. There are not limitations for ITIL to interfere with other frameworks as it offers only best practices with no obligatory character. These best practices also give guidelines how to effectively act with roles like a project manager in order to have effective cooperation. It is most often necessary the synergy between ITIL, a project management framework and an ISO or another standardization. There is a research [3] that studies the coexistence of four widely used frameworks and standardization:

- ITIL framework for managing the IT service
- CobiT – IT Governance framework that mainly focuses on the goal how the IT department and service should be controlled.
- CMMI – this is a framework focused on the software development. It aims to optimize the whole process of software product creation, increase its quality and optimize its cost.
- ISO9001 – standardization that assures general quality management levels.

The coexistence is described in Figure 1 [4]:

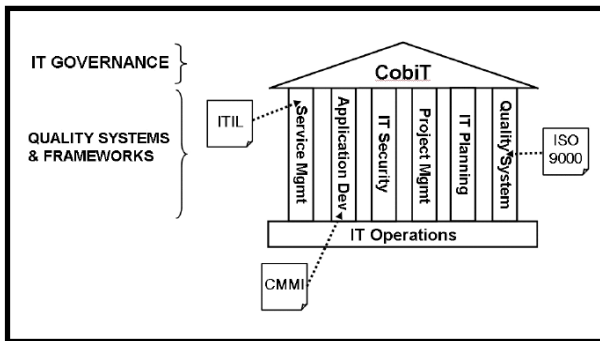


Fig. 1. Relationship of four frameworks to IT functions

#### IV. OTHER IT SERVICE MANAGEMENT FRAMEWORKS

Except ITIL, there are different solutions like frameworks, standardizations and methodologies that are available in the area of IT Service management (ITSM) [14]. They provide support for the management and the quality of the IT service. The most noticeable of them are: CMMI [5], Six Sigma [6], eTom [7]. It has to be mentioned that the listed solutions serve for the different areas of the ITSM and they cannot replace each-other for any purpose. There are also cases for co-existence between the different frameworks. Below we are going to review these solutions and highlight the main differences with ITIL.

CMMI is group of models that allows the processes in one organization to be benchmarked and therefore improved. Its main focus is over the processes for software development, support and management [5]. It has a five-stage measurement scale that represents the maturity level of the processes in a particular company. It is also being used as acknowledgement system that represents the company's quality of processes in front of customers and competitors. Despite of ITIL it does not provide exact guidelines how a particular task should be completed most effectively, but it is focused more on finding the process gaps and area of improvements.

Six Sigma is a methodology for minimizing the defects in the provided product or a service. It is achieving that goal by improvement the existent processes and continuous measurement of their effectiveness. There are following steps which are being universally followed: define, measure, analyze, design, and verify [6]. These processes are being very often followed together with ITIL processes like the supply management, quality management and etc. Six Sigma cannot be used independently like IT management process as it is intended only for eliminating the defects where a product is being produced to the customer.

ETOM (Enhanced Telecom Operations Map) is a business process framework that provides business processes aiming to achieve higher quality and efficiency as well as a common ground for collaboration between different teams and companies. The processes that ETOM provides are analogous to the ITIL processes but with the

specifics that they are more optimized for the Telecom industry [7]. Anyway, there are cases proving that ETOM is applicable in industries, different than the telecom one. It should be mentioned that the coexistence between ITIL and ETOM is possible after mapping the functions and roles between the both frameworks.

#### V. GOALS OF ITIL

The main goal of ITIL is to provide the IT managers as well as the whole organization with end-to-end processes which can allow them to have managed IT processes. These processes have to be able to continuously improve the organization's service. They also have to support meeting its strategic goals. This goal can be separated to the following sub-goals:

- User (account) satisfaction – this is the main goal which has to be reached when delivering the service. For achieving it, complicated mixture of sub goals have to meet. Satisfaction is most often periodically measured in organization level (quarter, half year, yearly). Of course the feedback by the affected users is also needed for this scoring.
- Optimized resource use – the Capacity Management ITIL process aims to involve needed resources in the most cost-efficient manner [8].
- Workflow optimization – Continual service improvement ITIL process is responsible for unstoppable workflow improvement
- Enhanced information security – regarding the ISO standard 17799:2000 [9] “Information security is achieved by implementing a suitable set of control, which can be policies practices, procedures, organizational structures and software functions. These controls need to be established to ensure that the specific security objectives of the organization are met.” That means that ITIL is not directly used to implement security but it may lead to enhanced security trough controlled processes. It is mainly achieved by the Availability management.
- Clear end-to-end monitoring – ITIL separates the monitoring activities in two parts:
  - o Proactive monitoring. By ITIL v.3 specification it is [10] “Monitoring that looks for patterns of Events to predict possible future Failures”.
  - o Reactive monitoring or just monitoring which by specification means “Repeated observation of a Configuration Item, IT Service or Process to detect Events and to ensure that the current status is known.”
- Clear roles defining – according to any ITIL's process there are set of roles. They are being assigned to one or

more employees. In particular cases some of these roles can be merged or replaced by the higher one as this cases are defined in the process.

## VI. STAGES OF ITIL IMPLEMENTATION

THERE ARE TWO MAIN APPROACHES POSSIBLE APPROACHES WHEN IMPLEMENTING ITIL.

The first one is rarely used. It is applied mainly for startup companies which intend to use ITIL implementation from its beginning. As there is no any previous experience, they are no IT management processes followed. In that case there is no current process design schema that should be taken in account. Some cost and time are being safe, but there is additional focus on the company's strategy. In such type of startup companies, it is more difficult to forecast the future extension that relevantly makes the ITIL implementation roadmap. Also this roadmap is not as much optimized as expected. Very often different resources like manpower, meetings, hardware are not being utilized effectively during the expansion process. That leads to often changes of the project like suppressions, redesign, etc.

The second approach is used for the most companies. It is suitable for all the organizations that already have at least a couple of years experience and respectively some internal IT management processes in place. After taking the decision for enhancing these processes to achieve the company's goals, the phase for development of the deployment plan is in place. It can be separated into the four main stages:

- 1) Assess current ITSM processes
- 2) Create roadmap for ITIL implementation
- 3) Manage the transition and evaluate its progress
- 4) Continual service improvement

## VII. ITIL STRUCTURE

Here we discuss mainly the newest version v3. of ITIL.

Between 2007 and 2011 (two editions), the third major version of ITIL was launched. This edition is providing more consistent decisions, following the fast growing IT technology progress as well as the modern business needs and outsource support model.

Version 3 of ITIL was covered into 5 main sets. There is also one additional which is often missed, because it is only a introduction book with a wide overview. The other five are:

- ITIL Service Strategy
- ITIL Service Design [11]
- ITIL Service Transition
- ITIL Service Operation
- ITIL Continual Service Improvement

These books are more directly oriented to the service provided.

On Figure 1 ITIL v3 Service Lifecycle is represented the structure of the ITIL v3 Framework. This shows that the Infrastructure Library is separated into 2 main components:

- The ITIL core
- The ITIL complimentary guidance.

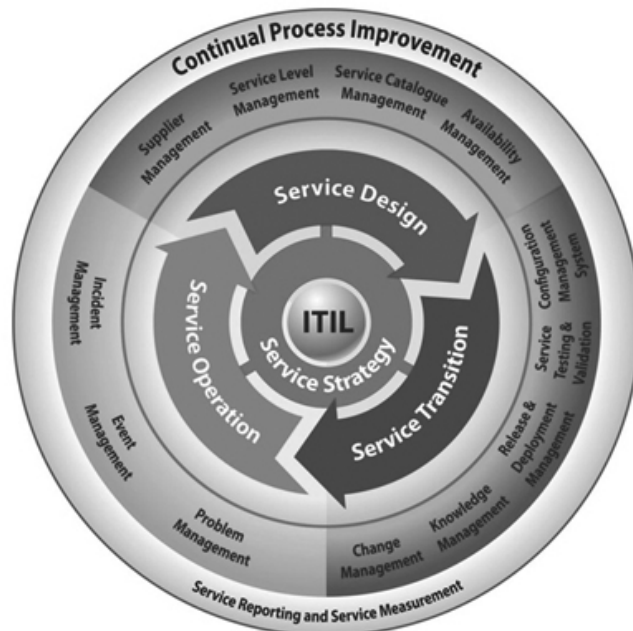


Fig. 1. ITIL v3 Service Lifecycle

## VIII. IN WHICH ORGANIZATIONS ITIL IS APPLICABLE?

There is no official definition, or frame which says in what type of business the ITIL framework can be implemented successfully. Basically the framework is not dependent by the organization's type of business. It is wide applicable, as the processes are universal and not directly interfering with the main product of the business.

There can be entered a rule, that bigger companies adopt easier ITIL than the small ones. The reason is mainly lack of resources and unsure results expected. As said in "delivering effective support. Adopting ITIL to fit your IT Business Model" [1] after conduct qualitative research with focus group of 30 companies: "Many companies felt that they had insufficient resources to implement such rigorous IT support standards as ITIL. Negative attitudes centred on standards being too much hassle, too costly or just not important enough to spend time on."

## IX. BENEFITS OF IMPLEMENTING ITIL

Based on a Forester Research Inc. questionnaire about "What were/are your main drives for investing in service management?" more than 2/3 of the companies had answered that they expect higher quality of the IT service and higher user satisfaction. Also almost half of them are aiming to

separate the IT departments into business service units. More than 40% expect to make cost savings with ITIL implementation. Here needs to be mentioned that the cost reducing is long term goal, as there are initial investments, which need to be made: for rearranging the human resources roles, to buy/create new software products, consulting services costs and etc.

## X. ITIL v.3 MAIN SUBJECTS

One of the main principles in the third version of ITIL is that it is focused over the full cycle of the service, until the version 2 gives the main attention over specific activities around the service delivery and service support. This third version allows the ITIL to be more independent from the perspective of the industry type. It is also much easier to implement it due to the facilitated content.

There are also significant changes to the terminology in the new version.

ITIL v3 processes are separated into 5 core subjects: Service Strategy, Service Design, Service Transition, Service Operation, and Continual Service Improvement. As shown in Figure 3, these subjects can be separated into two main streams depending on the process orientation.

- Governance Processes - IT governance is defined as the leadership and organizational structures, processes and relational mechanisms that ensure that an organization's IT sustains and extends its strategy and objectives. [12]. As seen in Figure 3, the Governance processes include the Service Strategy and Continual Service Improvement processes.
- Operational processes – these are the Service Design, Service Transition, Service Operation processes. They are responsible for the actual delivery of the agreed service.

There are 26 processes in common, described in ITIL v3. The most important of them are showed horizontally in Figure 3. As you can see most of them are placed in multiple subjects. The corresponding part of the process is described at any subject separately.

## XI. CONCLUSION

Based on the performed research over the structure of ITIL as well as its application and coexistence, we can conclude

that the mentioned framework provides effective toolset that allows effective management for the IT operations. Following its version history we can conclude that it is being adapted according to the demanding growth of the IT. We can point as challenge for the companies that want to adopt it the lack of clear instructions how to assess their environments and find the proper solution design for them.

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