

PROPOSAL OF EVALUATION CRITERIA FOR FREE AND OPEN SOURCE TOOLS FOR MODELLING AND SUPPORT OF IT SERVICE MANAGEMENT ACCORDING TO ITIL

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ABSTRACT

This paper responds to requirement to improve the orientation between offered SW, such as ITIL tools. Nowadays there are enormous amount of offered tools. This situation very often leads to poor implementation of ITIL on the basis of primary unappropriate choice. This paper is focused on the model and proposal of evaluation criteria for free and open source tools for modeling and support of IT service management according to ITIL. Thus this article aims to model the classification, which should facilitate choice of a suitable tool. Simultaneously, this classification will serve for further work – creation of methodology for evaluation of ITIL tools. In first phase this proposal is aimed mainly on Czech companies which will provide required feedback for future work.

INTRODUCTION

With the development of information and communication technologies (ICT) and their interference into all sectors, management and delivery of IT services gaining different dimension and meaning. The quality of providing or managing IT services can greatly affect the operation or performance of company (Lukas, L.; Cahlik, M. and L. Kralik. 2012). For this reason it was introduced as an internationally acclaimed standard known as ITIL. It is an acronym for Information Technology Infrastructure Library. ITIL is a set of concepts and practices that allow better planning and improvement of the use of IT, whether by the providers of IT services or by the customers (Kralik, L. 2013; Kralik, L. 2014).

ITIL is a collection of books in the form of extensive and widely available manual for IT service management. The experiences and recommendations have become best practices. Also it provides sufficient flexibility to adapt the recommendations from books ITIL requirements and needs of a specific corporation. ITIL represents a free available framework, covering the entire cycle of IT services. ITIL is suitable for all companies that operate IT services. As a framework,

ITIL is full of tips, warnings, knowledge, omissions, instruction, and things what to do or not do. One of the greatest benefits of ITIL is a fact that it is based on experience of others (Bucksteeg, M. 2012).

According to the current version of ITIL v3 it is possible to say that ITIL tool is an arbitrary software tool which use leads to probably improve and streamline the providing and managing IT services. There is only one condition – it must be a SW (Kralik, L. 2013).

The uses of ITIL tools are complicated due to the wide range of offered tools and their price. For this reason small and medium companies have no interest in usage of ITIL. On the other hand, recently significant amounts of Free and Open Source SW are beginning to discover even between ITIL tools.

ITIL LIFECYCLE

Form of each service according to ITIL is based on strategy (Service Strategy), which defines the reasons for its existence. Then it passes through the formulation of a proposal and development of service (Service Design), which is subsequently realized. Finally service is deployed (Service Transition) and operated on a daily maintenance (Service Operation). However, this is not end because service is monitored through all stages of the service lifecycle. This will allow continuous improvement (Continual Service Improvement) of all aspects of the service (Bucksteeg, M. 2012).

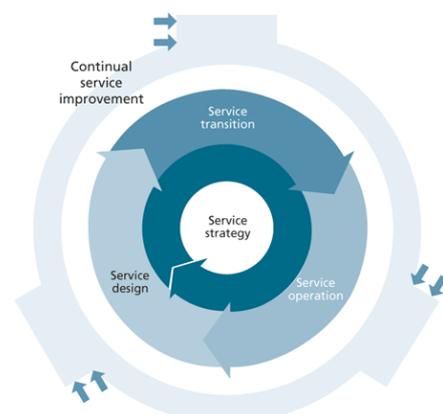


Figure 1: Service lifecycle (©Axelos 2011)

IT Service Strategy – Planning the IT Services

Service Strategy deals with the strategic analysis, planning, positioning, and implementation relating to IT service models, strategies, and objectives. It provides guidance on leveraging service management capabilities to effectively deliver value to customers and illustrate value for service providers (Axelos 2011c; Bucksteeg, M. 2012).

The following people, process and products combine to make this a functional operating unit with IT:

- People
 - Service Definition Manager
 - Service Research Manager
 - Financial Analysis Manager
 - Service Marketing Manager
 - Service Forecast Manager
- Process
 - Portfolio Management
 - Financial Management
 - Demand Management
- Products
 - Service Request & Planning Tools
 - Service Knowledge & Configuration Management Tools (Axelos 2011c; Bucksteeg, M. 2012)

IT Service Design –Modeling the IT Services

Service Design translates strategic plans and objectives and creates the designs and specifications for execution through service transition and operations.

- People
 - Security Engineering Manager
 - Desktop Engineering Manager
 - Network Engineering Manager
 - Systems, Servers & Storage Engineering Manager
 - Applications Engineering Manager
- Process
 - Service Catalogue Management
 - Service Level Management
 - Capacity Management
 - Availability Management
 - Continuity Management
 - Information Security Management
 - Supplier Management
- Products
 - Service Catalogue Tools
 - Service Level Management Tools
 - Capacity Planning Tools
 - Service Modeling Tools
 - Service Knowledge & Configuration Management Tools

IT Service Transition - Implementing the IT Services

Service Transition provides guidance on the service design and implementation, ensuring that the service

delivers the intended strategy and can be operated and maintained effectively.

- People
 - Security Asset Manager
 - Desktop Asset Manager
 - Network Asset Manager
 - Systems, Servers & Storage Asset Manager
 - Applications Asset Manager
- Process
 - Support & Transition Management
 - Change Management
 - Asset & Configuration Management
 - Release & Deploy Management
 - Validation Management
 - Evaluation Management
 - Knowledge Management
- Products
 - Asset Management Tool
 - Service provision Tool
 - Run Book Task Automation Tools
 - Service Knowledge & Configuration Management Tools (Axelos 2011a; Bucksteeg, M. 2012)

IT Service Operation – Managing the IT Services

Service Operation provides guidance on managing a service through its day-to-day production life. It also provides guidance on supporting operations by means of new models and architectures such as shared services, utility computing, web services, and mobile commerce.

- People
 - Security Operation Manager
 - Desktop Operations Manager
 - Network Operations Manager
 - Systems, Server & Storage Operations Manager
 - Applications Operations Manager
- Process
 - Event Management
 - Incident Management
 - Problem Management
 - Fulfillment Management
 - Access Management
 - Service Desk Function Management
 - Service Operations Function Management
 - Technical Operations Function Management
 - Application Operations Function Management
- Products
 - Service Desk with Incident Management Tool
 - Problem Management Tool
 - Event Management Tool
 - Troubleshooting Tool (Axelos 2011b; Bucksteeg, M. 2012)

IT Continual Service Improvement – Measuring the IT Services

Continual Service Improvement provides guidance on measuring service performance through the service life-cycle, suggesting improvements in service quality, operational efficiency and business continuity.

- People
 - Service Measurement Manager
 - Quality Measurement Manager
 - Compliance Measurement Manager
 - Security Measurement Manager
 - Resource Measurement Manager
- Process
 - IT Governance Management (using COBIT best practices)
 - IT Resource Management (using PMI methods)
 - IT Quality Management (using Six Sigma methods)
 - IT Security Management (using ISO standards)
- Products
 - Compliance Management & Measurement Tools
 - Service Knowledge & Configuration Management Tools (Bucksteeg, M. 2012)

EVALUATION CRITERIA

Availability of Free and Open Source ITIL tools on the market is really wide that cause very difficult orientation between them. This problem is also related to selection of the most appropriate tools for a specific company. Therefore, below is defined proposal of the basic criteria for selection and evaluation of these tools with simple description (Ho, W., Xu, X., Dey, P.K. 2010.). However, it is important to say that each company may have different requirements and other criteria (Oddershede, A., Carrasco, R. 2010). So, same tool is useful for one company and at the same time might be useless for another company. So this proposal will be tested and reviewed in practice and obtained feedback will be used for modification of these criteria.

Following categories for criteria was established on practical experiences and reviews with IT managers. Proposed basic criteria for Free and Open Source ITIL tools are divided into several groups:

1. Product Functionality
2. Requirements for Free and Open Source Project
3. Specifications
4. User friendliness (Kralik, L. 2013; Kralik, L. 2014)

Product Functionality

Criteria relating to the functionality vary by application category. A large number of features do not

necessarily mean that the application is better than competing product with a shorter list of features. At this time, this point cannot be assessed quantitatively as a measurable criterion of selection, but rather as an overview which may apprise readers and provide them information about the basic functions of the product. However, in future will be proposed criteria related to this category.

Requirements for Free and Open Source Project

Under term of Open source project is meant organizing and managing a group of people who are involved into the development of the product.

In this category it is possible to define following criteria (more details in Table 1):

- Duration of the project; version in which the product is available.
- License, under which the product is offered.
- Activity on the mailing lists - community
- Option of commercial support.
- Appropriate documentation - is the absence of the necessary documentation was in the selection of appropriate tools stumbling block relatively large number of projects. The basic requirement in this case, I consider the existence of technical documentation and user documentation.
- Demo application – trial version.

Table 1: Values of Requirements for Free and Open Source Project

Value	Scale	Note
Duration of the project		
1	<i>Less than 1 year</i>	New project, high probability of bugs, insufficient testing in practice
2	<i>1 – 2 years</i>	New project tested in practice, minor bugs
3	<i>2 – 4 years</i>	Average duration of Open Source projects, suitable for implementation
4	<i>4 – 5 years</i>	Reliable project, issuing regular updates, at least version 2
5	<i>More than 5 years</i>	Reliable project, issuing regular updates, at least version 5
Activity on the mailing lists - community		
1	<i>Low activity</i>	Incomplete answers, long waiting time for new answer
2	<i>Low – medium activity</i>	Waiting for new answer more than 7 days
3	<i>Medium activity</i>	Waiting for new answer till 7 days

4	Medium – high activity	New answer during few days (3), own community
5	High activity	New answer during one day, own community - forum
Option of commercial support		
1	No	
5	Yes	
Appropriate documentation		
1	Without documentation	
2	Weak	Help + illustrative examples; language: English/Czech/Slovak
3	Average	In electronic form (i.e. PDF) + help; language: English
4	Good	In electronic form (i.e. PDF) + help + illustrative examples; language: English
5	Excellent	In electronic form (i.e. PDF) + help + illustrative examples; language: English/Czech/Slovak
Demo application – trial version		
1	No	
5	Yes	

Specifications

Most of the Free and Open Source products use of ready-made programs usually also available under any other Free or Open Source licenses. This covers programs such as the Apache web server, or database servers MySQL, PostgreSQL, e-mail servers Postfix and so on.

Technical parameters are therefore a considerable amount and in particular, for each of this software may vary. Therefore, it is evaluation only directly influenced by the following parameters (more details in Table 2):

- HW requirements
- Supported operating systems - Cross-platform
- Integration with other SW
- Difficulty of configuration

Table 2: Values for Specifications

Value	Scale	Note
HW requirements – RAM		
1	More than 8 GB	
2	4 – 8 GB	
3	4 GB	
4	1 – 3 GB	
5	512 MB – 1 GB	

HW requirements – CPU		
1	Intel i5, i7; AMD Bulldozer core; quadcore	
2	Intel i3, AMD K10 Core; multicore	
3	Intel Dual-Core, AMD K8 Core; Dual-core	
4	Intel Pentium 4, AMD K7 Core; 64-bit single core CPU	
5	Intel Pentium 4, AMD K7 Core; 32-bit single core CPU	
Supported operation system		
1	OS X or Linux	
2	MS Windows 8/8.1	
3	MS Windows 7/8/8.1	
4	MS Windows 7/8/8.1/XP	
5	MS Windows 7/8/8.1/XP, OS X, Linux	
Integration with other SW		
1	No	
2	Yes; Email or Office SW	
3	Yes; Email + Office SW	
4	Yes; Another ITIL tool	
5	Yes; Another ITIL tool + Email + Office SW	
Difficulty of configuration		
1	Very difficult	Command line; need knowledge about programming, scripting and databases on high level
2	Difficult	Command line; advance knowledge about scripting or databases
3	Medium	GUI; advance knowledge about scripting or databases
4	Easy	GUI; basic knowledge about scripting or databases
5	Very Easy	GUI; user knowledge

Other parameters such as licenses, programming language, etc. are given only as a parameter list and have only informative value to the end user, which can serve to more specific evaluation according to the requirements of the specific company.

User friendliness

User friendliness is the main parameter that affects the user's ability to learn to work with a new product and use all functions. Improperly designed user interface can greatly influence user's work.

Evaluation of this criterion is very subjective and based primarily on practical experience. At the same time here enter localization - used language and of course the entire GUI (Graphic User Interface). Some tools are merely for the Command line.

Values with descriptions for these criteria are described in Table 3.

Table 3: Values for User Friendliness

Value	Note
User interface	
1	Command line

2	<i>Command line + simple GUI</i>
3	<i>GUI + command line</i>
4	<i>GUI; confusing structure of GUI</i>
5	<i>GUI; intuitive design of GUI</i>
Language	
1	<i>Other</i>
2	<i>English</i>
3	<i>Slovak</i>
4	<i>Czech</i>
5	<i>Choosing language</i>

CONCLUSION

Due to the widespread of information and communication technologies, which today affects absolutely all human activity, the use of IT management is absolutely necessary. ITIL framework has deal whit this issue with more than 20 years of experience. It gathers the best experience in IT management and provides advice and tips. With this way ITIL helps to companies improve their overall IT management efficiency.

The main objective of the project was to design a procedure for modeling and evaluating Free and Open Source ITIL tools. A license for commercial product often goes up to the order of hundreds of thousands of Czech crowns. And even after implementation of this tool, there is no guarantee that the product purchased for individual company is the right solution. Another option is to choose from Free or Open Source solutions. However, they are on the rise and each year comes a large amount of new projects. Not all of them have high quality and have a future. Another fact is the absence of a database or a web portal, which would be devoted to this issue. Based on these fact was created project about the evaluation of Free and Open Source ITIL tools. Also this project serve for future work aimed on proposal and creation of methodology for evaluating of ITIL tools.

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