

INFORMATION TECHNOLOGY AND  
MANAGEMENT SCIENCE  
INFORMĀCIJAS TEHNOLOĢIJA UN  
VADĪBAS ZINĀTNETHE OPTIMIZATION OF USE OF IT INFRASTRUCTURE AND THE  
IMPLEMENTATION OF ITIL PROCESSES IN STATE INSTITUTIONS

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## 1. Introduction

At present, more and more big and small companies begin to structure produced and gained IT services in order to balance them with the current and planned needs for the own business and for the clients, to improve produced/gained quality of service and to reduce long-term investments into IT infrastructure.

In the last decade information technology (IT) had a severe influence on business processes. Personal computers (PC), local area networks (LAN), client-server technologies and the rapid spread of Internet services had let organizations faster introduce their products and services into the market. The above-mentioned innovations announced transition from industrial to information era where everything happens in a more dynamic way. In traditional hierarchical enterprises the reaction to rapidly changing market conditions often is much slower than really needed, which led to the origination of new type of enterprises with smaller hierarchical grade [6].

In the enterprises themselves the accent has moved from vertical functions to horizontal processes that are working within the whole organization but decision making was moved to lower levels. At this background, fast development of IT service management processes occurred.

World experience has shown that IT service management isn't an easy task: on the one hand, it is related to business explosion, but on the other hand, organizations that are implementing IT service management usually have deep focus on the optimization of internal processes. Nowadays IT service management has become a needed instrument for supporting companies' basic functions. System development and functioning issues are more and more defined with the influence of "business view" [7].

## 2. IT management strategies

The aim of this paper is to describe the current situation in IT infrastructure utilization and management procedures at the governmental level, to propose possible solutions for the optimization of IT infrastructure utilization, to analyze IT Infrastructure Library (ITIL) processes at a theoretical level and to produce a methodology of ITIL processes delivery at government unit.

In recent years it has become increasingly recognized that information is the most important strategic resource that any organization has to manage. Key to the collection, analysis, production and distribution of information within an organization is the quality of the Information Communication Technology (ICT) systems and IT services provided to the business [5]. It is essential that we recognize that ICT systems are crucial, strategic organizational assets and therefore organizations must invest appropriate levels of resource into the support, delivery and management of these critical IT services and the ICT systems that underpin them. However, these aspects of IT are often overlooked or only superficially addressed within many organizations [2].

The challenges for IT managers are to co-ordinate and work in partnership with the business to deliver high quality IT services. This has to be achieved while reducing the overall TCO and often increasing the frequency, complexity and the volume of Change. The main method of realizing this goal is the operation of effective processes and the provision of appropriate value for money services. To accomplish it, the correct processes need to be developed and implemented within built assessment and improvement mechanisms. IT management is all about the efficient and effective use of the four Ps, people, processes, products (tools and technology) and partners (suppliers, vendors and outsourcing organizations) [1].

Management therefore needs to develop joint strategies and plans for all four areas (Figure 1). However, many organizations, in the past and still today, recognize the four Ps but do not use them for maximum advantage. All too often products are bought to manage areas of technology and then the processes, partners and people's roles are engineered to fit the technology and its limitations. The people and processes issues must be addressed first and this is one of the core principles of ITIL [4].

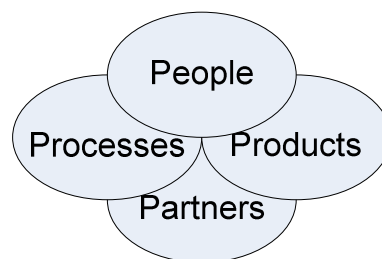


Figure 1. The four P's

## 3. Analysis of institution IT infrastructure

In general all government institutions have strongly highlighted hierarchical structure (Figure 2), which means that the reaction to fast changing outside environment (for example, a lot of new EU Information systems that have to be implemented in a short period of time) is critically slow.

Moreover, it can be mentioned that decision making is really timely process not only because the decision itself has to be approved on various hierarchical levels but also because

of time it takes to even start the approval process. From the authors’ point of view, the main problem of government institutions preventing them from implementing big projects is budget. The budget is foreseen for a whole year; that’s why all unplanned activities and costly things are banned from the very beginning if they are not included into the current fiscal year. Besides, it takes one more year to wait till the approval of a new budget. But on the other hand, if it was decided to implement some new services or functions, nothing can stop one from achieving his/her aim.

Another well known problem when implementing new services is unwillingness of working personnel to support new undertakings. Almost all of uninterested or not familiar with things being implemented for sure will be against them. That phenomenon can be easily explained – who needs new things when old are working perfectly – why should some kind of Helpdesk be called in case of problems with the network if network administrators can be contacted directly?! Usually it takes a lot of time to explain that in case of fire centralized phone is contacted, not a friend fireman.

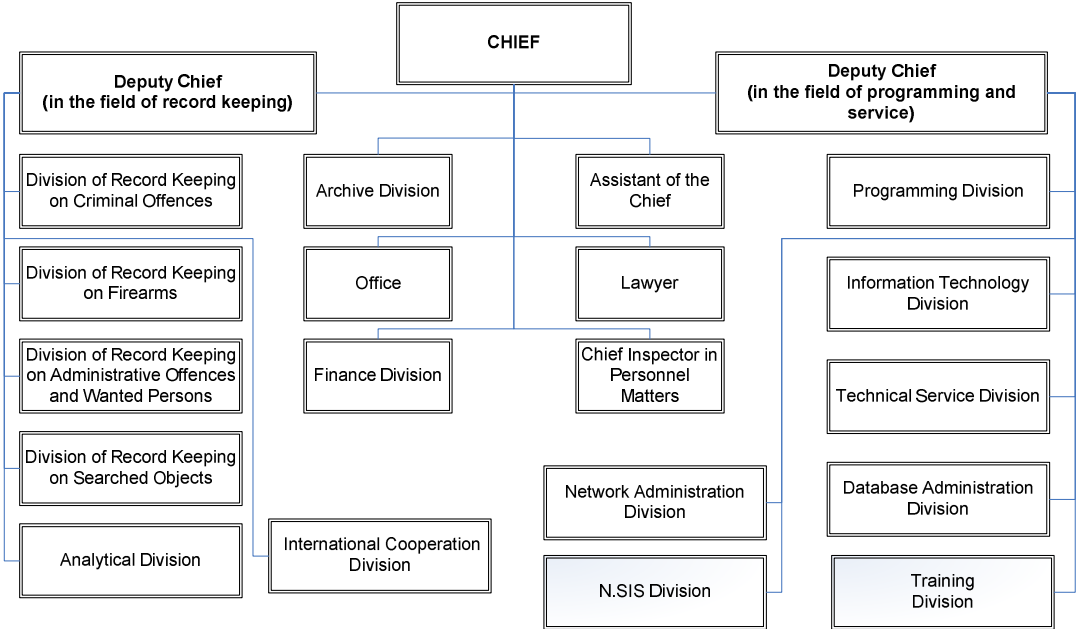


Figure 2. Organizational structure of information centre

Another way to make people act in needed way in government institutions is to use brutal force. Of course it’s not preferred way but it should be considered as a possible solution that shouldn’t be forgotten about [3].

A good thing that should be mentioned – quite modern registration systems almost in all government institutions that later can be used to trace all configuration units to their disposition. These registration systems will give input information when implementing configuration management (Figure 3), for example.

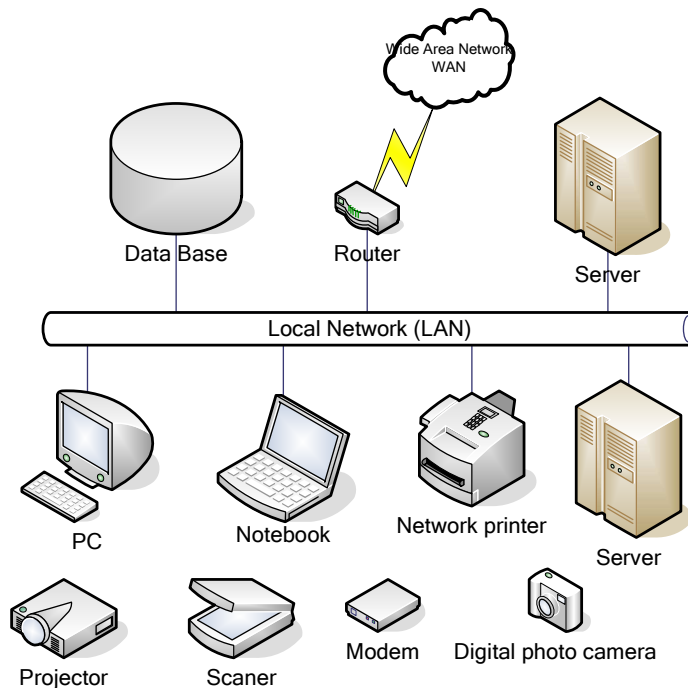


Figure 3. Configuration units

#### 4. Implementation of ITIL processes in state institutions

Taking into account the above-mentioned problems related to decision making and budgeting of big projects it's not hard to imagine that some big IT service providers like Information Centre of Ministry of Interior hadn't had any "one point of contact" system. For that reason end-users had to contact various personnel to solve different problems. Only a few years ago a decision was made to start implementing ITIL. As a first step for achieving this goal, Help desk was introduced. It was planned that Help desk would overtake not only Problem and Incident management which is mostly intended for external users, but also internal things such as Configuration management.

For that reason, Service Level Agreements –SLA- were introduced for external service gainers and modification of internal documentation was started to allow Help Desk personnel to forward problem handling to different Information Centre units such as Data Base administration, Network administration etc.

To control Help Desk performed activities, special software has been introduced which allows both reporting on a problem via WEB based interface, and various reports can be generated allowing hierarchy to receive specific information regarding not only Help Desk as a whole but also every worker in particular.

Speeding up of a project was achieved by introducing long-term plan for the whole ITIL implementation and short-term plans for the assignments given to different units of Information Centre. Also reporting on a regular basis was introduced which gave input information for the analysis. So the needed corrections to the plans can be made timely. Here the Deming Quality Cycle(see Figure 4) should be mentioned which is a closed-loop feedback system, based on the Plan-Do-Check-Act (PDCA) model and is capable of receiving inputs for improvements from any planning perspective.

All the above-mentioned activities have led to smooth achieving of the goal – Help Desk started its operations as planned.

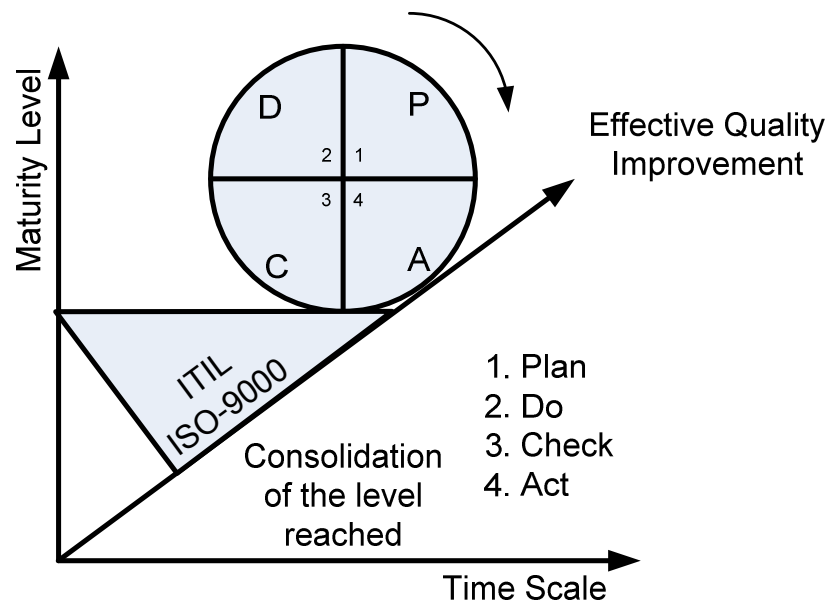


Figure 4. Deming quality cycle

It should be stated that timely made activities that are aimed at informing the hierarchy on planned changes, which gives known understanding and support from its side, should mitigate a lot of risks – such as lack of support from higher instances, insufficient communication resources etc.

## 5. Conclusions

IT services governance is not an easy task, because it is related to rapid business growth on the one hand, and on another hand it is dependent on the focus on the optimization of internal IT processes in institution. Nowadays, IT services governance has become a necessary tool to support institutional basic business processes. Implementation of ITIL processes has a positive impact both on the quality of provided services and personnel of service provider company, as well as disciplines IT beneficiary institution employees.

The analysis of the current organizational structure of Information Centre of the Ministry of Interior requires modernization of Information Centre processes, relating to provided IT services. Based on the current research, the technique of IT services governance implementation was developed using ITIL methods and processes.

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**Dorogovs Pjotrs, Romānovs Andrejs. Informācijas tehnoloģijas infrastruktūras izmantošanas optimizācija un infrastruktūras pārvaldības labākās prakses procesu ieviešana valsts institūcijās**

*Patlaban Latvijas uzņēmumi uzsāk sniegto un saņemto IT pakalpojumu strukturēšanu ar mērķi līdzsvarot tos ar esošām un plānotām vajadzībām gan biznesam, gan arī klientam, uzlabot sniegto un saņemto pakalpojumu kvalitāti un samazināt ilglaicīgas investīcijas IT infrastruktūrā. Šā raksta mērķis ir aprakstīt patreizējās IT infrastruktūras izmantošanas un pārvaldības paņēmienus Latvijas Republikas Iekšlietu Ministrijas Informācijas centrā, piedāvāt iespējamus risinājumus IT resursu izmantošanas optimizācijai, teorētiskajā līmenī izanalizēt IT pārvaldības paņēmienus, balstoties uz pasaules IT koncepciju, politiku un labāko praksi krājumu (ITIL). Pētījuma ietvaros tika veikta esošās valsts iestādes IT infrastruktūras analīze, tika identificētas IT pakalpojumu sniegšanas problēmas, kuru risināšanai var tikt izmantotas ITIL metodes un prakses. Tika izstrādātas un pielietotas ITIL procedūru ieviešanas metodes Latvijas Republikas Iekšlietu Ministrijas Informācijas centrā.*

**Dorogovs Pjotrs, Romanovs Andrejs. The optimization of use of IT infrastructure and the implementation of ITIL processes in state institutions**

*Nowadays Latvian enterprises begin to structure produced and gained IT services in order to balance them with the current and planned needs both for the own business and for the clients, to improve the quality of produced and gained services and to reduce long-term investments into IT infrastructure. The goal of this paper is to examine the current use and management procedures of the IT infrastructure within Information Centre of the Ministry of Interior of the Republic of Latvia, to propose possible solutions for the optimization of the use of IT infrastructure, to analyze at the theoretical level the IT governance methods, based on international set of IT concepts, policies and best practices (ITIL). While conducting research, an analysis of the current IT infrastructure of a state institution was performed and IT services providing problems were identified. To solve these problems, ITIL methods and practices could be used. ITIL implementation procedures are worked out and implemented for the Information Centre of the Ministry of Interior of the Republic of Latvia.*

**Дорогов Пётр, Романов Андрей. Оптимизация использования ИТ инфраструктуры и внедрение процессов ИТIL в государственных учреждениях**

*В настоящее время предприятия в Латвии начинают структурирование предоставляемых и получаемых ИТ услуг с целью уравновесить их с настоящими и планируемыми нуждами как для бизнеса, так и для клиента, а также улучшить качество предоставляемых и получаемых услуг и снизить долгосрочные инвестиции в инфраструктуру ИТ. Цель этой статьи – описать приемы использования и управления ИТ инфраструктурой в Информационном центре Министерства внутренних дел Латвийской Республики, предложить решения по оптимизации использования ИТ ресурсов, на теоретическом уровне проанализировать приёмы управления ИТ на базе международного сборника концепций политик и наилучших практик ИТ (ITIL). Во время исследования был проведен анализ существующей ИТ инфраструктуры государственного учреждения, определены проблемы предоставления ИТ сервисов, для решения которых могут быть использованы методы и практики ИТIL. Были разработаны и применены методы внедрения процедур ИТIL в Информационном центре Министерства внутренних дел Латвийской Республики.*