THE PAPRIS METHODOLOGY VERIFICATION USING THE IMPLEMENTATION OF SPECIFIC INFORMATION SYSTEM FOR PUBLIC ADMINISTRATION

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Abstract
The article focuses on process management in public administration using the specific case study of the statutory city of Ostrava. Based on the selected part of the PAPRIS methodology, the process management is verified, and conclusions from the application of information system e-SMO ("Electronic Statutory City of Ostrava") are generalized. Ostrava is third the biggest city in Czech Republic with approximately 320 thousand citizen.

Article describes experiences with SW implements, which are used for model of process in public administration. Particiaty at local authority of Ostrava town. Model of process is a basis for reengineering of process in state administration and preparation for implementation of big information systems. Mapping of process is providing implement and confirmation methodology to identify existing processes. Problem with its using consist in that, senior manager don’t informs, what organization is determination by processes. If are not described in given to organization current processes, or how would have had look new optimum processes, will not endeavour about reengineering successful. Procedural analysis namely offer tool and check methodology to identification current suit ("at") and it is possible him use either as instruction ("how so about to be") for reengineering function handling administrative and self-rule activities. Purpose of the article: The PAPRIS methodology was used when defining the objectives for implementation of the information system for public administration (PAPRIS - Process Approach - Public and Regional Information System). This methodology has been elaborated by one of the authors and published in a very general scheme when solving many case studies (Krajčík, 2006), (Krajčík, 2007), (Krajčík, 2013) (Krajčík, 2014). We assume that the PAPRIS is primarily a methodology with incorporated elements of procedural approach for project management in public administration information systems (PAIS). The specific supporting process of communication between the client and the e-SMO ("Electronic Statutory City of Ostrava") system has been chosen for verification. The model of supporting communication process, created by ARIS tools, is crucial, and the structure of scripts (ICM and IVR) is subsequently made. The aim of this article is to verify that the methodology is sufficient and appropriate to manage such a large project such, undoubtedly, is the e-SMO (Vlček, 2009). Methodology/methods: Defined productive and non-productive processes with their defined process cuts represent a crucial category for the process structure of IS projects. This is fully accepted by the PAPRIS methodology. Process cuts are understood, in the logic modelling according to the PAPRIS methodology, as clearly defined logic directional cuts in three-dimensional space of all project processes. The process set is systemically categorized, in a given logic directional cut, into mutually disjoint process sub-sets, which are characterized by this particular directional operator. The directional operator always has a clear logical allocation that is based on the construction of a process view. Theoretically, an infinite number of process views can be used. One of the important issues in a methodology for the case studies includes the size of the research sample. It is usually assumed that there is no ideal number of cases and that the number between four and ten usually provides good results. Other authors defining against any quantitative standards for any determination of the sample size of the case studies, since such an approach denies the internal logic of this methodology and the richness of the information obtained from participants in the research. Research which is carried out using case studies does not aspire on

DOI: 10.1515/cks-2016-0009
compliance with the requirement the representativeness of the sample. (Štrach, 2007). Methodology of case studies is among the established guidelines of qualitative research (Štrach, 2007). Research on using case studies in the last 30 years has seen an extraordinary increase in social-scientific research, including research on business and management (Dul, Hak, 2008).

Scientific aim: The essential aim of this study is to describe the way the process cut defines a productive process and non-productive process, in accordance with the PAPRIS methodology using the specific example. While the triggering mechanism of the project production process is an event causing its own production – i.e. the specific output with added value for the customer, the project of non-productive process is caused by the project management event. Therefore, it is caused by the need to control, monitor, track, inspect, evaluate outputs, decide and regulate the project implementation. Findings: Within the support of the communication process, two examples were used to verify the methodology. The global perspective on the process was created in ARIS tools and the communication between the call centre and the client was made in Visio tools. The PAPRIS methodology is based on the concept of process variability, which has been clearly formulated. The fundamental direction of the process development, anticipated changes and the opportunity to react to them in accordance with defined objectives of the PAIS project are guaranteed.

Keywords: Process, Process Analysis, Process Model, PAPRIS Methodology, Information System for Public Administration, ICM (Intelligent Contact Management), IVR (Interactive Voice Response).

JEL Classification: D83, L15

Introduction
In the open information society the public administration authorities have an opportunity to draw from the findings and experience that numerous productive, non-productive, profit, and non-profit organizations have acquired in the sphere of process improvement for several decades (GRASSEOVÁ, 2008). Process management is one of possible tools for further economic growth in the organization. In public administration sector it means the introduction of such changes that will lead to:

- increase in public administration efficiency, i.e. to a higher service quality provided in accordance with the status of individual public administration bodies,
- error rate reduction,
- acceleration of service delivery (citizen request processing),
- cost-reduction of provided services (Vlček, 2006), (Vlček, 2009).

The project e-SMO is a good option. The information system e-SMO ("Electronic Statutory City of Ostrava") represents a modern and attractive way of communication between citizens and authorities. Fast, reliable and clear operation of citizen's requirements is given thanks to the option of using the Internet, telephone and other elements of communication used for dealing with the public authority. The eSMO is a tool that should make transactions provided by public authority easier. From a technical viewpoint, the communication between citizens (the ICM structure and IVR scripts) and the e-SMO is designed in such a way that, in case of the further expansion, there will not be necessary to change the logic of the functional units. Only modular expansion, from the citizen-client's viewpoint the expansion of user units, is performed. Depending on the dialled telephone number a script, which controls the behaviour of IP Call Centre, is selected (Vlček, 2009).

1 PAPRIS Methodology
The selected parts of this communication system will be verified using the PARRIS methodology. The PARRIS methodology (PAPRIS – Process Approach - Public and Regional Information
System) (Krajčík, 2013), (Krajčík, 2014) is based on defined process categories that are described in
the procedural elements of project management methodologies. Furthermore, it is based on general
principles and characteristics of the procedural approach to project management of information sys-
tems, and on the principle of system categorization as well.

Basis process of PAPRIS methodology delimit product and no-product process. It is nec-
essary to managing, to monitoring, to pursue, to supervize, to evaluate outputs, to decide and to
coordinate project implementation.

The graphic relations are on the figure No.1

![Figure 1 Schema: Product and no-product project process](image)

On the other way PAPRIS methodology provides process of control quality project outputs. The process to collects information which compare project outputs with real values of implement in-
formation system. Process controls of the harmony with relevant standard. The process to analyse the
acceptance criterion witch content real information system and control development element and au-
thorize procedures. The graphic relations are on the figure No.2
1.1 Goal Formulation Process and Output Process

The project's process goal is in accordance with the PAPRIS methodology and it is defined for the IS final state, which was chosen by the control body in the IS project. We can categorize it according to the level of abstraction, time horizon, the degree of openness, and by its content. Its design and implementation have been coordinated.

1.2 The Process of Defining the Project Purpose

The project purpose is an information requirement that is viewed as a goal defined in the broader context of the generated process output which is part of the IS. That means that the project area, expressing a reason or a requirement on the information output existence, as the IS needs it. The process function reacts to the purpose, says what it has to be filled with. The process is, as part of the IS project, transparently and clearly justified. It is defined why and for whom it exists and what it has to provide. The formulation of the process function is done in accordance with the principle formulated in the PAPRIS methodology.
1.3 The Process of Specification of the Strategic Planning Process

The intentions are based on the project’s vision. There is a clear idea about for how relatively long time the process, in its particular form defined by the IS, will realize its mission and fulfil the imaginations of the contracting authority. The strategic aims are concretized by the strategic objectives of the IS process. They are measurable and determine the range and the time period in which the aim should be fulfilled. The other processes defined in a dynamic perspective are directly linked to this process.

The strategic aims define long-term interests of the contracting authority as well as the final output from the IS. So, this process can be understood as a basis and guide for the formulation of the sub-aims.

2 Processes within the PAPRIS Methodology in the e-SMO Application

Processes are designed as legally independent - describing possible technological channels that are operating as a part of the e-SMO project. Possible legislative restrictions, in the sphere of mutual communication between the client and the Statutory City of Ostrava (SMO), which result from individual agendas, are taken into account within each agenda – only the channels that are in compliance with agenda legislation are always selected for agenda communication. Currently it includes all the major technological possibilities established in the market.

Communication between the client and the SMO represents one of the major benefits and features of the e-SMO project. The project includes the following communication channels:
- Call Centre - authorized and unauthorized access
- Web Portal - authorized and unauthorized access
- Information Booth - authorized and unauthorized access
- SMS Gateway
- Reservation System Counters - only authorized access
- Client Notification System (Vlček, 2009).

Individual agendas are designed in such a way that the technological possibilities of individual communication channels are maximally supported and fully used.

The results of these changes are following:
- Increasing the effectivity of the clients’ requests processing
- Increasing the clients’ awareness in relation to individual agendas – i.e. increasing the clients’ awareness of the course of individual agendas processing, the required documents, contact information and, last but not least, increasing the clients’ awareness of the status of request processing.
- Minimizing the number of personal visits in the SMO / ÚMOb offices
- Taking into account the clients’ preferences regarding the communication with the SMO.

Possible changes of communication requirements resulting from the legislative changes in relation to individual agendas are considered individually in each agenda, and therefore, they are not objects of this support process (Vlček, 2005).

The change of clients’ preferences for individual channels can be expected – as the citizens’ access to the Internet, mobile technologies and the widespread use of electronic signatures are increasing. The increase in use of the authorized portal and the e-mail communication with electronic signature can also be expected. This tendency also significantly depends on the number of citizens registered in the e-SMO. The support process includes all the communication channels that were, as a part of the e-SMO project, put into service (Figure No.3).
The process is divided into two basic scenarios:
- communication model: client - SMO - communication channels that the client can communicate with the SMO
- communication model: SMO - client - communication channels that the SMO can use for communication with clients

and it is divided into three supporting sub-processes:
- Ordering System
- Serving Clients at Counter
- Filing Office (Vlček, 2009).

The process begins with the client's request, respectively SMO's request, to communicate with SMO, respectively to communicate with the client, and ends with establishing communication on the particular communication platform, including the client possible authorization in the e-SMO. The factual solution of the specific requirement is always part of the particular agenda.
3 Structure of ICM and IVR Scripts

Depending on the dialled telephone number the caller selects ICM script that controls the behaviour of IP Call Centre. Two phone numbers are used during the implementation. The first is intended for a common telephone contact and it is to be found in all the information media used for informing the public (Internet, message boards,...). The second is intended for VIP citizens (private telephone number) (Vlček, 2010).

After the selection of ICM script (Figure No.4), based on the dialled phone number (DN), the verification, whether the call comes during the contact centre working hours, is done. The comparison is performed towards predefined values that are set in the configuration parameters of the utilized components. This is a static definition. So if something changes, it is necessary to make this change in configuration parameters of this object as well.

If the call comes in working hours, the verification of the call centre occupancy will follow. Current records stored in the MS SQL database are used to obtain the current value, which is later used for comparison. These data are also used for report collection. The resulting value represents the function of the current number of calls in queue IPCC, the average operating time of call, and the number of active agents. Based on the obtained values, it is possible to inform the callers from the very beginning. They may spend in line more time than they are willing to accept, and thus give them a choice.

It is assumed that the IPCC occupancy is not too high. Thus, the call can be forwarded. Then there is started the main IVR script, the task of which to obtain information from the citizen needed for further decisions in the ICM script. The ID agenda and the Customer ID belong among the acquired information. These values are further used in decision-making and choosing skill groups. If there is an available agent in one of skill groups, in which the agents are grouped according to the level of knowledge, the call will be directly forwarded to the available agent. Of course, the aim is to choose an agent from the group with the highest level of knowledge at first, when there is no agent available in this group, the next group of agents with lower level of knowledge is sought through. However, if no available agent is found in any of the groups, the call is forwarded to the call queue. Based on the DN, the priority is set for VIP calls to ensure that high-priority calls will be preferred before other calls.

When the call is forwarded to the queue, the estimated waiting time is calculated. This value is then passed to the IVR script, which ensures that the caller is given a message that informs him/her about the estimated waiting time in the queue. If the agent is available or has just been released, the incoming call is forwarded to the available agent.
4 Discussions

The process management in public administration using the PAPRIS methodology on the specific case study of the statutory city of Ostrava was found to be very useful and up-to-date subject matter. The reason for the usefulness and topicality gives the increasing implementation opportunity of public and regional information systems that solve the need for public information and thanks to their content and the access are socially beneficial. The original scope of work provides the basis for further research of procedural approach for project management in development of both the public and regional administration information systems.
The examples of possible follow-up studies include further development of the procedural approach for the PAPRIS methodology based on the implementation experience in already realized IS municipal projects in the fields of development processes, supporting sources and the development of new standards in relation to new occupations created to ensure the IS project management. The study on workplace process development of the PAPRIS methodology would be appropriate. It would include organizational, technical and personnel support of the institute with the task to ensure the development of the methodology.

There would undoubtedly be requirement for the development of technical support of tools for the process methodology support analysing the selection and purchase of tools and specification of the work procedures in the particular environment (based on the generalization gained in the course of the e-SMO project realization using the PAPRIS methodology).

5 Conclusion

The sensitive social bond, client (citizen) – public administration, may be intentionally influenced by the use of information systems and technologies. The appropriate implementation of the principles of process analysis using the PAPRIS methodology provides the opportunity to integrate automated principles into processes performed by state and local government administration.

The presented work is based on both theoretical studies of the procedural PAPRIS methodology and also on the e-SMO project implementation. Based on the specific example, the application then confirms that information and processes, respectively functioning mechanism that collects, creates, develops and produces valid and relevant information to the procedural approach, process maps and process flows, are the basic precondition for rational and efficient management of the new IS.

On the one hand, this article tries to prove the introduced fact; on the other hand it also tries to clarify the ideological concepts gained in the course of the implementation of project process technologies and methodologies in the management of information systems in public administration, and to show the specific creation and management procedure. The authors believe that the text will contribute not only to the development of theoretical knowledge, but it will also lead to the practical application of the PAPRIS methodology.

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