QUALITY, EFFECTIVENESS AND MANAGEMENT INFORMATION SYSTEMS PERFORMANCE OF LOCAL TREASURIES BUDGET ACCOUNTING

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Abstract: The role of management information systems (MIS) of local treasuries budget accounting is to provide qualitative information support to management in process of decision making and to provide effective managing of key processes of budget accounting, in accordance with requests of management on all levels of decision making. From the aspect of effectiveness and request for quality, in accordance with request of users and defined system goals, this research includes the analysis of characteristics and goals of identified key processes, critical succecs factors (CSF), key performance *indicators (KPI), standards for realization of users requests, results of processes and indicators of goals realisation . The aim of this paper, based on the results of the analysis, is to develop models for evaluation of quality and effectiveness and to define key performance indicators of MIS of budget accounting, in order to perceive the level of achievement of the goals of the system, effectiveness of processes and level of fulfillment of requirements and needs of all users groups that are significant for budget accounting of local treasuries.*
Keywords: quality model, model effectiveness, performance, budget accounting, management information systems

1. INTRODUCTION

Information technology has changed the performance of traditional accounting systems. Increasingly more information, which is produced in electronic form, must be processed, stored and represented in information technology based accounting systems. Dominant processes of globalization and ambient in which modern systems of budget accounting function, as a basic subject of public finances, have led to new requirements and needs for improvement of process of management and decision making in accordance with the requirements from the environment and developed concepts of modern information-communication technologies. In order to have efficient management of processes of budget accounting, it is necessary to improve the process of decision making and managing, by providing consistent information and by developing information system that generates, processes and distributes those information. Process of management and decision making requires quality, effectiveness, efficiency, integration of processes, consistency and concurrent approach to data [11]. Scientists Vaassen [18] and Xu, H., Nord, J. H., Nord, G. D., & Lin, B [19] talk about quality of decision making, information and information systems. They propose that when assessing the quality of information, the focus should be on the degree to which information can be utilized in decision making.

Institutionalization of local treasuries allows the new approach to financial planning and management of processes within the subsystems which define the basic functions of budget accounting of local treasuries. Research and analysis, based on studies and program documents of OECD (Organisation for Economic Co-operation and Development), World bank, International monetary fond, PEFA (Public Expenditure & Financial Accountability) and European Union, in the area of budget accounting and treasury activities in the countries of European Union and of the world, point out the sinificance of managing of public finances and processes of budget accounting and a need for development of integrated management of information systems of budget accounting on local level [1, 8, 15, 16]. The main goal of MIS (***M**anagement **I**nformation **S**ystem*) of budget accounting of local treasuries is to provide a qualitate information support to management in process of decision making and to enable effective managing of key processes of budget accounting, in accordance with requirements of management on all levels of decision making.

In order to determine the qualitative degree of result of implementation of MIS budget accounting of local treasuries, approach to modeling of quality and effectiveness is presented in this work, from the aspect of defined criteria which refer to inputs and their transformation into outputs. For the needs of defining of model of effectiveness and quality, results of modeling of MIS budget accounting of local treasuries are used in this work, through all fases of life cycle of development

of IS (SDLC-System Development Life Cycle) [3, 5]. In accordance with used process approach [12], from the aspect of support to management on operative, tactical and strategic level, this research includes: defining of performances of key characteristics of processes, recording of data significant for monitoring of characteristics of key processes (time, deviation, quality), identification of object of measuring, addition of new attributes of object of measuring significant for control and managing, identification of deviation from given values of characteristics of objects of measuring and change of system configurationn depending on change of key processes (addition, deleting and/or change of structure of activities and order of implementation of activities), that is, change of role and responsibility of system users.

Within the process oriented informational infrastructure that makes definition of management activities possible on the business processes level, methods of management processes, which provide application of continual system improvement were used, most notable of these methods are: **MBO** (**M**anagement **B**y **O**bjectives), **PDCA** (**P**lan **D**o **C**heck **A**ct- Planning Implementation, Control, Improvement) *metod*, **SPC** (**S**tatistical **P**rocess **C**ontrol), **Kaizen** metoda, **BSC** (**B**alansed **S**core **C**ard) and **Six Sigma.**

Modeling of quality and effectiveness of the system is implemented through different phases, every phase has its ownelements. This research introduces

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elements of managing, control and effectiveness of processes [4], based on analysis of current state, defining of goals, mission, vision and strategy, by use of information technology, and then analyzes and evaluates achieved results (**Figure 1**).

For needs of the research and the analysis of fulfillment of needs and requirements of users, key performance indicators of **MIS** are identified, defined in order to measure vital processes and activities, that is, critical factors of success as basic indicators of quality of processes and system in general. Concrete structure of indicators in function of decision making and managing has been analyzed. Chosen performance indicators, linked to strategic pyramid of decision making, present a basis for measuring of strategy and goals of the system and for evaluation of effectiveness of key processes and activities of MIS of budget accounting. The purpose of this paper is to perform the analysis and evaluation of quality, effectiveness and indicators of success of MIS of local treasuries budget accounting compared to status quo, based on developed effectiveness model, quality model and key performance indicators, by use of *Six Sigma* method [14], statistical methods and method of comparative analysis of the results. Analysis of the results of measuring of indicators of identified processes performances, based on data for the period of three consecutive years, on the sample of three local treasuries.
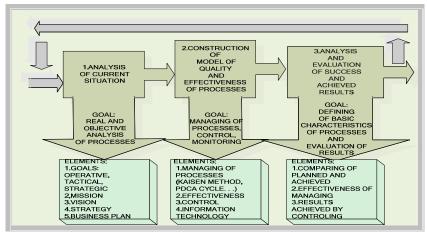

Figure 1: Phases of defining of models

2. QUALITY MODEL OF *MIS* OF LOCAL TREASURIES BUDGEACCOUNTING

Defining of mission, goals, organisational structure, finctional structure, information structure and management structure of the system, and in the other

hand, defining of system users requirements, represents the basis preconditions for construction of integrated information system for support to local treasuries management in decision making. Strategic management, as the highest of all management levels, is directed to values, goals and mission within the functional entities of the business system. Strategic managing stands for establishing of system of control of managing,

integration of strategic and tactical decisions and implementation of strategic plans and related goals [6].

Requirements of standard of quality management of information system of local treasuries budget accounting are defined based on key processes, users requirements on all levels of management and decision making,distribution of responsibility of management, critical factors of success (**CFS-Critical Success Faktors**), and management of resources. Three groups of processes are identified from the aspect of QMS:key processes, management processes and processes of supporting.

Basic functions and processes are defined by identification of key processes, that is, functional areas of local treasuries budget accounting, as logical parts of group of activities on which the achievement of goals of the system depends.
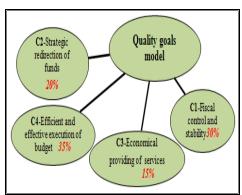

Figure 2 – Metrics of goals

Identified key business processes are:
-   -P1: Processes of appropriation processing,
-   -P2: Processes of planning of budget execution,
-   -P3: Processes of taking over of obligations,
-   -P4: Processes of payment requirements and of funds transfering processing,
-   -P5: Processes of payment and,
-   -P6: Processes of booking.

Noting that the basic role of management structure (management of local treasuries budget accounting) is making of effective decisions, quality and effectiveness as goals of the system improves the process of decision making and enables more efficient monitoring and managing of process of budget accounting [9]. Managing and providing of quality of processes of management of information system of local treasuries budget accounting is a basisi of efficient and effective achievement of defined goals and projected effects of the system. Determination of goals represents a great help in defining of standards of evaluation of quality and results of processes and makes possibility for the managing structure to evaluate and improve the critical activities of processes. [17].

Model of goals of quality is defined based on the analysis of group of basic and individual goals and the results of key processes of the system. Every goal has its metrics (**Figure 2**). Weigts in expressed by percent are obtained through process of evaluation of stakeholders needs.

Criteria for modeling of quality of budget accounting information system management are: (1) availability of information system and information to users and management; (2) connections between accounting quality and international accounting standards (3) harmonization with information system from the environment; (4) ability of information system to adapt to new conditions and requirements; (5) level of compatibility between users requirements and information system; (6) quality of output information; (7) level of security of data and model; (8) level of achievement of given goals of management; (9) simplicity, consistency, timing and frame of information; (10) adequate distribution of information; (11) providing of information support necessary for decision making in strategic management; (12) level of automation of processes. [7, 13, 19, 20]

Quality of the system observed as an analogy with the requirements, represents a totality of characteristics of the system that is based on the ability of the system to satisfy a certain need and satisfaction of system users by meeting their requirements. That means that quality of the system is a level which a set of system characvteristics reaches by meeting users requirements and expectations.

By use of methodologies directed to mechanisms of providing of quality, management of budget accounting information system provides information support to monitoring and improvement of quality of processes through: monitoring of activities, verification of entered data, statistical analysis, gatherig of data about every entity (from the process of planning to the process of realization of budget execution) [2], relevant information for all participants of the system, access to any information in the system from one place, planning of activities and exchange of information from the whole system including internal and external users.
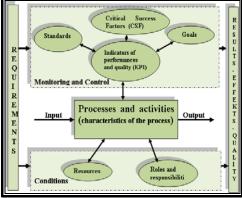

Figure 3 – Generic model of MIS quality

Table 1- Analysis of goals

C - PLANNING OF BUDGET	
Goal 1	Efficient, effective and integrated planning of budget
Goal 2	Real projection of income and outcome
Requirements and needs of users (input)	Information about structure of income from previous years, Information about initial appropriations and changes of appropriations, Information about obligations of payment and payment requirements
Critical success factors (information, decisions, assumptions)	Compatibility of budget with expected income and planned outcome; Providing of compatibility of real income with priorities of alocation of funds; Introduction of middle-term budget planning; Quantification of influences of budget measures (on republic level) on processes of budget accounting of local treasury; Involvement of all budget users in the process of preparation and planning of budget
Needed standards for satisfaction of users requirements (initiative)	Defined roles and responsibilities; Financial reporting which enables comparative analysis of needed data; Adequate documentation and reporting for comparison of planned and realized; Comprehensive and selective reviews and reports; Consistent reporting from previous periods; Approach to public data bases; Development of support to reliable internal statistics; Developed internet environment and approach to transparent data bases regarding economic trends and budget processes on the level of Republic
KPI	Deviation of Plan of budget from expected income (%)
Source of verification of goal	Reviews and reports which are provided by management of information system of local treasuries; budget accounting; Information from external environment; Public data bases

In order to have efficient system of management of local treasuries budget accounting and efficient managing of processes, possibilities of selection an Key Performance Indicators (KPI) were analyzed, as qualitative and quantitative indicators for measuring, monitoring and managing of results of process of budget accounting of local treasuries.

By affecting the key performance indicators, performances of the system and achievement of goals are affected too, therefore, modeling of quality of management of information system of local treasuries budget accounting is based on defined goals (what) and strategy of system development (how), key success factors (areas areas we are focused on), key performance indicators (metrics) and key action initiatives. Precizely definined goals, which are based on satisfaction of users, are comparative and measurable and their concretization is performed through identified processes of delegating of responsibility and authority, which is defines in the phase of system analysis. A plan of actions of achievement of defined goals is defined with the use of process approach, which represents a basic approach in managing with the use of goals. This plan of actions is presented through generic model of quality of management of information system (***Figure 3***).

For needs of research about achieved results, from the aspect of quality and effectiveness of MIS of ocal treasuries budget accounting, based on the defined vision of the system, for the group of basic goals, critical factors of success of the goals, processes which participate in the ralization of goals, of management of information system, needed resources, standards for meeting users reqirements (standards for satisfying users needs), indicators of measurability of defined goals and a source of verification of goals have been analyzed.

In ***Table 1***, operative instruments of quality control for defined goals are presented: C1-efficient, effective and integrated budget planning and C2-real projection of income and outcome, for a group of goals- Planning of budget.

3. MODEL EFFECTIVENESS

For needs of analysis of management of budget accounting information system, based on defined key information about need and ways of fullfilling users demands, methods and techniques that focus on effective and efficient achievement of goals with the concept of establishing of process-oriented organizational structure were used. Process-oriented organizational structure is a consequence of integrated development of system.

In process of development of information system management, process inputs are defined by requirements, needs and goals of management and other system users, by regulations, standards and other specifications. Performances of processes are

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differentiated as: quality performances (reliability, durability), quantity performances (volume, flows, completeness), time performances (speed, delivery, availability, distribution), execution performances and value performances (costs, price). Given goals of the process serve as

a basis for determining of goals of subprocesses and activities. Primary business processes, processes of support and managing processes which are defined in the process of system development, represent a basis for forming of network of performances which is based on a model of network of standards of system performances. Structure of network based on this model incorporates: (1) structure of value for system users which presents the character of defined requirements and expectations of system users; (2) structure of primary and secondary business processes and activities which enable a full realization of users requirements on all levels of managing and decision making, including external users; (3) managing processes that give initiative, direction and safety of realization through formulation and implementation of strategy and (4) standards and attributes of different aspects of system quality, as logical product of realized structure of the system and connections between individual subsystems, which provides a coordinated approach to business activities and achieved results. Based on key goals and influences on system quality and satisfaction of interested parties, identified in the process of defining of quality model, for needs of modeling of effectiveness of the system, goals of typical processes and measures of success were defined. Based on these goals and

measures, analysis on the level of activities and on the level of processes was performed. On the level of processes, process lists were made, based on these lists, measures and goals of processes were analyzed through questions: Are the defined goals of key processes connected to each other and to goals of the system? Are the business processes decomposed into logical and efficient processes and subprocesses and is the managing of processes and of performances of processes adequate? On the level of activity, these questions were analyzed: Are the activities and standards that refer to users requirements in accordance with the requirements of processes? Does the system meet the requirements of activities and are the phases of activities, in logical order, compatible with expected results and defined characteristics of process quality? Basis for analysis of quality and effectiveness of processes of budget accounting and identification of processes which need to be promoted, consists of: defined responsibilities and ownership over processes of accounting, identified critical success factors (*CSF*) and establishing of adequate system of measuring of quality and effectiveness of processes. The aim of realization of this activity is to define the results of processes, adequate indicators of quality of processes and effects of certain processes, through identified key success factors and defined goals for every process. An example of process analysis is presented-Preparation of plan of budget execution (*Table 2*). Target effectiveness standards were formulated for every process and activity, and is, requirements of performances of processes were defined.

Table 2: Analysis of effectiveness of the process

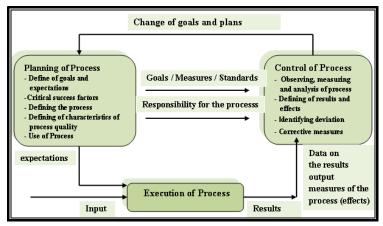| Goals of processes	Proces	Activity
Compatibility between projections and budget planning, and needs of budget users	**Preparation and making of plan of budget execution**	P 2.1.1-Making of projection of budget outcome P 2.1.2-Comnpatibiliy between projection of budget income and plans of budget execution P 2.1.3-Considering and adopting of plan of outcome of budget users
Defining of strategic frame of priorities		
Critical success factors (CSF)	Planning of cash limitations for budget users	
	Managing of budget sources	
Result of process	Making Izrada of plan of spending for budget users in accordance with determined volume of outcome	
Indicators (characteristics) of quality of processes	Relation between planned budget outcome and planned outcome for previous year (substraction) (%)	
	Participation of budget users in process of preparation and formulation of budget (yes/no)	
Effect achieved by achievement of goals	Development of sector strategies and planning of outcome; Providing of compatibility between real outcome and priorities; Unique process of budget planning; Preparation of initial limits	

Figure 4: Process effectiveness model

With the aim of providing of improvement of business processes, management of processes within the effectiveness model, includes: (1) planning of processes, based on defined goals and characterisitcs of quality of processes; (2) managing of execution of processes and their continuous improvement in order to achieve expected results; (3) introduction of actions which enable shortening of time needed for managing and optimal using of resources; (4) control and measuring of quality of basic processes and all added activities and (5) introduction of system of monitoring of results of business processes with the aim of identifying a deviation and implementing corective measures (***Figure 4***).

4. ANALYSIS OF KEY PERFORMANCE INDICATORS

Model of performances of MIS of local treasuries budget accounting includes: all forms of organizational system, all fazes of life cycle of the system, all forms of quality and effectiveness during all fazes of development and all system users.

Based on the model of quality and model of effectiveness, key performance indicators are defined (***Table 3***), i.e. indicators of success of developed MIS, which represent integrated evaluations of performances of these groups of indicators:

- Realization of budget planning - it indicates the extent to which the planned budget represents real realizations, it examines variations between outcome, planned and actual income as well as the influence of obligations on the structure of planned outcome;
- Universality and transparency - it examines distribution of information with central level which reflects on effective information

resources and local finances management;
- Predictability, recording and reporting - represent adaptability and availability of information about budget implementation on all levels of management, as means of managing and control of processes of budget accounting.

For evaluation of performances, Six Sigma model has been used, concept that is connected to improvement of processes and the way of achieving the improvement of system quality. SPC (Statistical Process Control) is a basis for Six sigma methodology.

Basic purpose of Six sigma model, within the metrics, is measuring of variability of processes which is used for measuring of level of quality and represents a standard which points out the level of control over any process in the system [10]. Six Sigma methodology includes defining, measuring, analysis, improvement and control of processes, which can lead to finding and removing of causes of variations in processes and to development of alternatives that can lead to reduction in variations. It can be observed as a system management of quality which is directed to continuous improvement of processes, which represents:

- Understanding and management of user's demands,
- Directing of key process to fulfillment of defined requirements,
- Use of data analysis for reduction of variations and
- Implementation of continuous improvement of processes.

Sigma is a symbol for standard deviation, i.e. positive root of the variance of the process. Standard deviation is used for measuring of deviation from the mean, i.e. average. Average represents the centeredness of the process, standard deviation indicates its deviation and represents the basic of functioning of processes.

Table 3: Examples of key performance indicators MIS of budget accounting of local treasuries

INDICATOR	GRADE
IK 1 - Total outcome compared to approved budget *Dimensions that are assessed:* The difference between actual primary expenditure and the originally planned expenditure of primary	*Grade and the minimum necessary conditions:* **4** - Deviation of actual expenditure against the planned 5% higher than planned spending, in one of the last three years **3** - Deviation of actual expenditure against planned is 10% higher than planned expenses in one of the last three years **2** - Deviation of actual expenditure against planned was 15% higher than planned expenses in one of the last three years **1** - Deviation of actual expenditure against planned is 20% higher than planned expenses in one the last three years
IK 2- The structure of expenditure in relation to the approved budget *Dimensions that are assessed:* The extent to which the difference in the structure of primary expenditure is greater than the total variance of primary expenditure (IK1)	*Grade and the minimum necessary conditions:* **4**- The difference in the structure of expenditure is greater than the overall primary expenditure deviation for up to 5% in any of the last three years **3**- The difference in the structure of expenditure is greater than the overall primary expenditure deviation for 5% to more than one of the last three years **2**- The difference in the structure of expenditure is greater than the overall primary expenditure deviation for more than 10% at most one of the last three years **1**- The difference in the structure of expenditure is greater than the overall primary expenditure deviation for more than 10% in at least two of the last three years

By using the descriptive statistics, organized data about observed sample which enables the analysis of current state and identifying opportunities for improvement has been gathered, and inferential statistics enables concluding about future events linked to important parameters of processes based on gathered data.

For measuring and evaluation of performances, mathematical methods of standard deviation and variance have been used. For analysis of results of the research, three local treasuries have been chosen as a sample: Valjevo, Ub and Loznica. For the research that concerns indicators of success of projected system,

indicators IK1 and IK2 have been chosen. Results of statistical analysis of IK1 and IK2 could point out the quality and effectiveness of the process of developed MIS compared to current state.

For needs of analysis of performance indicators, parameters of monitoring for three periods have been presented in relative values. In *Table 4*, analysis of performances for indicator IK1 is shown

Considering the fact that the grade of performance indicator IK1 is linked to indicator IK2, result of statistical analysis and grade for indicator IK2, for observed local treasuries, are sown in the *Table 5*.

Table 4: Performance evaluations for IK1- Total outcome compared to approved budget

Local Treasury Valjevo					
	2006	RSD	2007	RSD	2008	RSD
		EUR (01.01.2006.)		EUR (01.01.2007.)		Eur (01.01.2008.)
The budget plan	1025000000.00		1796750000.00		1800000000.00	
	11988304.09		22743670.89		22718667.17	
Budget execution	996762805.87		1409595128.64		1678737784.22	
	11658044.51		17842976.31		21188158.33	
Absolute deviation	28237194.13		387154871.36		121262215.78	
	330259.58		4900694.58		1530508.84	
Percent deviation	2.75		21.54		6.7	
GRADE	2					

Local Treasury Loznica					
	2006	RSD	2007	RSD	2008	RSD
		EUR (01.01.2006.)		EUR (01.01.2007.)		Eur (01.01.2008.)
The budget plan	857283000.00		1071619651.00		1424869335.00	
	10026701.75		13564805.71		17983962.32	
Budget execution	714460304.92		812321989.11		987070065.01	
	8356260.87		10282556.82		12458286.82	
Absolute deviation	142822695.08		259297661.89		437799270	
	1670440.88		3282248.88		5525675.50	
Percent deviation	16.7		24.2		30.7	
GRADE	1					

Local Treasury Ub					
	2006	RSD	2007	RSD	2008	RSD
		EUR (01.01.2006.)		EUR (01.01.2007.)		Eur (01.01.2008.)
The budget plan	512404793,00		621674500,00		660.450.000,00	
	5993038,51		7869297,47		8335857.63	
Budget execution	453588580,76		524532425,42		586685225,60	
	5305129.60		6639650.95		7404836.87	
Absolute deviation	58816212,24		97142074.58		73764774.4	
	68790.89		1229646.51		931020.75	
Percent deviation	11.5		15.6		11.2	
GRADE	2					

☐ In RSD ☐ In EUR on the day of 01.01.2006.; 01.01.2007.; 01.01.2008

Table 5: Performance evaluations for IK2- Outcome structure

Local Treasury Valjevo			
	IK1	IK2	
Year	The total expenditure deviation	Structural deviation	The relationship of structural variations of the total deviation
2006	2.75	8.74	5.99
2007	21.54	27.22	5.68
2008	6.7	13.1	6.4
GRADE	2		
Local Treasury Ub			
	IK1	IK2	
Year	The total expenditure deviation	Structural deviation	The relationship of structural variations of the total deviation
2006	11.5	15	3.5
2007	15.6	26	10.4
2008	11.2	20.1	8.9
GRADE	2		
Local Treasury Loznica			
	IK1	IK2	
Year	The total expenditure deviation	Structural deviation	The relationship of structural variations of the total deviation
2006	16.7	29.5	12.8
2007	24.2	33.8	9.6
2008	30.7	43.5	12.8
GRADE	1		

Chart1: IK1- Relationships and Trends

Structural variation of the total expenditure deviation

Chart 2: IK2- Relationships and Trends

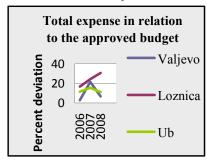**Total expense in relation to the approved budget**

Chart 1 show that, within the observed interval for the chosen sample, local treasury Loznica has a negative trend of outcome realization compared to budget plan, which points out the low level of quality and effectiveness of process of planning. We can see that there are some oscillations in local treasuries Valjevo and Ub, deviation in 2007. is greater than in other two years. These indicators point out the need for multiyear planning with an aim of reduction in variability in system performances. Relations between analyzed local treasuries are somewhat expected, considering the fact that the budget affects the quality of planning process.

Result of analysis of deviation of outcome structure (functional classification of budget) compared to total planned outcome (**Chart 2**) show that local treasury Valjevo has the same trend of deviation of fund allocation with the budget plan in all three observed years, local treasury Ub has a significant deviation in last two of three years, with a tendency of reduction, and local treasury Loznica has the highest level of deviation with a negative trend.

5. CONCLUSION

Requirements for information and measuring of quality and effectiveness with a purpose of achieving continuous improvement of processes by focusing on the goals, processes and users requirements are dominant questions in the area of budget accounting of local terasuries. Other then needs for development and implemenatation, management of information system of local treasuries budget accounting, in accordance with tendencies and trends which exist in the countries of EU and the countries of the world, there is also a need for introduction of system of quality, control, monitoring and defining of system success indicators, in accordance with developed methodology which is implemented within the studies of PEFA.

Models of quality and effectiveness which are directed to meeting the requirements of users, managing of processes, measuring of realization of goals, monitoring of the results of processes, monitoring of necessary standards and providing of basis for continuous improvement of processes are presented in this paper. Model of performances and results of its use are defined as a support to management in diagnosis of the state of the system and in directing further decisions with a purpose of improvement of quality and effectiveness of the information system.

Models for monitoring and evaluation of resaults of using of budget funds are developed, on the level of treasury, by sectors and functional areas. Besides that, use of standard regulations and treazury procedures wich are in accordance with international norm of quality, effectiveness, efficiency, transparency and responsibility on all levels of managing and decision making is provided, within MIS bouget accounting.

Grades for indicators IK1 (total outcome compared to approved budget) and IK2 (outcome structure), on observed sample consisting of three local treasuries, indicate that there is conflict between planned and realized funds, both at the aggregate level and within the sector planning. Low grades indicate that planned budget funds are not supported by goals of distribution in primary areas, which confirms the need for middle term planning and predictions based on results.

Introduction and development of integrated systems of management in the area of public finances is an imperative, therefore, establishing of architecture of IMS is necessary, which could be a subject of further studies.

REFERENCES:

[1] Allen, R., Tommasi, D.: Managing Public Expenditure A Reference Book for Transition Countries, SIGMA, OECD, 2001

[2] Alt, J. E., Lassen, D. D.: Transparency, Political, Polarization and Political Budget Cycles in OECD Countries, American Journal of Political Science, Vol. 50, No. 3, pp. 530-550, (2006).

[3] Avison, D., Fitzgerald, G.: Information Systems Development: Methodologies, Techniques and Tools, Mc Grow-Hill, London, (2006).

[4] Arsovski, S.,: Process Management (in Serbian), monograph, Faculty of Mechanical Engineering, University of Kragujevac, 2007, Kragujevac

[5] Arsovski, Z.,: Information systems (in Serbian),, Faculty of Economics, University of Kragujevac, Kragujevac, 2008.

[6] Arsovski, Z., Arsovski, S., Mitrović, Z., Stefanović, M.,: Simulation of Quality Goals: A Missing Link Between Corporate Strategy And Business Process Management.. International Journal for Quality Research, Vol.3, No.4, pp. 317-326, ISSN 1800-6450, University of Montenegro and University of Kragujevac, (2009)

[7] Barth, E., Landsman, R., Lang, H.: *International Accounting Standards and Accounting Quality,* Journal of Accounting Research, Vol.46, No.3, 467-498, (2007).

[8] Blondal, J.: *Budžet reform in OECD member countries: common trends*, OECD Journal on Budgeting, Vol. 4, No. 4, OECD, p. 10, (2003).

[9] Condor, V.: *Towards the harmonization of local accounting systems in the international context*, Financial Accountability and Management, Vol. 18, No.2, May, 129-162, (2002).

[10] Gotsch,S.B., Davis, S.B.,: Quality Management: Introduction to Total Quality Management for Production, Processing and Services, Prentice Hall, New Jersey, 2006

[11] Heidmann, M., Schaffer, U., & Strahringer, S. (2008). Exploring the Role of Management Accounting Systems in Strategic Sense making. Information Systems Management, 25(3), 244-257.

[12] Jeston, J., Nelis, J.: Business Process Management, Butterworth-Heinemen, Elsevier, Amsterdam, (2008).

[13] Meeks, G. & Swann, P.(2009). Accounting standards and the economics of standards. *Accounting and Business Research,* Volume 39, Issue 3, pp. 191-210.

[14] McCarty, T., Daniels, L., Bremer, M., Gupta, P., : The Six Si8gma Black Belt Handbook, McGraw Hill, 2005.

[15] OECD (2004), „The Legal Framework for Budget Systems: An International Comparison", OECD Journal on Budgeting, Special Issue*, Vol. 4, No. 3, OECD, Paris, 2004.

[16] PEFA-Public Expenditure & Financial Accountability: Guidelines for application of the PEFA-Performance Measurement Framework at Sub National Level, Volume 2, March, 2008, Paris

[17] Pendlebury, M.(2004). A Theory of the Published Accounts of Local Authorities. *Financial Accountability and Management*, Volume 20, Issue 3, pp. 305-325.

[18] Vaassen, E. (2002). Accounting information systems: a managerial approach: John Wiley & Sons Ltd.

[19] Xu, H., Nord, J. H., Nord, G. D., & Lin, B. (2003). Key issues of accounting information quality management: Australian case studies. Industrial Management & Data Systems, 103(7), 461-470.

[20] Wu, S. & Zhang, P. (2009). International Accounting Standards and Internal Performance Evaluation. *The Accounting Review,* Volume 07, pp. 1283-1311.

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