EDITURA LUMEN în elita editurilor românești

Available online http://lumenpublishing.com/journals/index.php/jls

e-ISSN: 2067-8509; ISSN-L: 1841-6195

Jurnalul de Studii Juridice

Year XII, No. 1-2, June 2017, pp. 55-64

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DOI: https://doi.org/10.18662/jls/5

Covered in:
CEEOL, CrossRef, CrossCheck, Index Copernicus, Ideas RePeC, EconPapers, Socionet

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How to cite: Tavala, F- M. (2017). The It Audit – A Legal And Performant Form Of Public Audit With Increased Relevance In The Current Macroeconomic Context. *Jurnalul de Studii Juridice*, Year XII, No. 1-2, June 2017, 55-64. Doi: https://doi.org/10.18662/jls/5

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THE IT AUDIT – A LEGAL AND PERFORMANT FORM OF PUBLIC AUDIT WITH INCREASED RELEVANCE IN THE CURRENT MACROECONOMIC CONTEXT

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Abstract:

In the current post-crisis macroeconomic context, the Supreme Audit Institutions (ISA) through their expertise should become effective detectors of producing systemic imbalances, initiators of systems corrections, financial guarantors of order in the system, tools to create public trust, but also a macroeconomic stabilizing force. Both financial audit, but especially the performance audit should shift to new areas. In this regard, the paper presents in detail modern methods of approaching the audit activity at ISA, such as the IT audit.

Keywords:

IT audit, public audit.

1. Introduction

The Information systems auditing issue was imposed by the evolution of public audit responsibilities in the development of information and communications technology (ICT) and by the progress towards the information society - knowledge society (IS-KS). The expansion of the ICT causes, on the one hand, that it becomes the object of the audit, and on the other hand, that it becomes a mandatory tool for auditors in all forms of audit. ***Audit of information technology/information systems (IT/IS)*** is a *distinct branch of the audit*, which includes techniques and methods of auditing the hardware, software and communications infrastructure, the software applications, the traditional and modern information systems, whether or not integrated and, more recently, the mobile applications and the web applications (Funar, S., Rusu, V., (2014). In accordance with the Declaration of Lima from October 1977 on Guidelines on audit precepts, *the IT audit should be considered as part of an integrated approach to the audit*, the effect

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of the paradigm of sciences and techniques program relating to financial management.

In this approach, it is considered that from the total activities associated to an audit mission, 40% represent activities specific to the financial audit, 30% IT governance assessment activities, 20% activities specific to the performance audit and 10% IT security assessment activities.

2. IT Audit

The approach of the IT systems audit can be analyzed from three perspectives (*The informatics systems audit - Manual*, Romanian Court of Accounts, 2012):

a) through the prism of the ***country context***: with details on the natural coordinates of

the *national specificity*, namely on those concerning the *environment* (physical, social, economic) and the *infrastructure* (market, political, legislative, etc.);

b) through the prism of the approach based on the ***public services***, detailing some

important services for the economy and society, and showing some progress elements in matter of *e-government* (education, health, taxes and duties, etc.); the detailing includes both technological aspects, as well as the benefits recorded by those services;

c) the approach based on ***common frameworks*** (such as, for example, a common

interoperability framework; similar, it can also be taken into account common frameworks for functional processes and capabilities).

Of a real interest are also the characteristics of the convergent evolution of ICT and of the audit activities: focusing on the *transformation impact* that ICT has over the *external audit* and extending the audit concept of the technological informational governance towards the *audit concept of the e-government type systems*, dictated by the *generalization of the electronic government*.

The most important international institutions, which have a determining role in regulating the field of the audit, in general, and of the IT audit, in particular, are: INTOSAI (*International Organization of Supreme Audit Institutions*), IAASB (*International Audit And Assurance Standard Board)* within the *International Federation of Accountants* (IFAC), IIA (*The Institute of Internal Auditors*), COSO (*Committee of Sponsoring Organizations of the Treadway Commission*), ISACA (*Information Systems Audit Control Association*). The supreme Audit Institutions (ISAs) are affiliated to the INTOSAI professional organization and, implicitly, to its regional groups, but the legislation regulating the activity of the supreme audit institutions does not

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contain explicit provisions concerning the IT audit. However, most ISAs carry out IT audit missions within specialized structures (according to a statistical analysis over the information provided by 45 SAIs selected based on the maturity criterion of the IT audit reflected in the presentation of the IT audit domain), the regulatory framework being harmonized with the INTOSAI Framework (*The Audit of the informatics systems - Manual*, Romanian Court of Accounts, 2012).

At the INTOSAI level, the IT / IS audit approach is now being promoted as *an integrated process*, the particularities of the field also involving elements specific to the *financial audit*, the *organizational audit*, *the information and communication technology audit*, *the performance audit and the compliance audit*. On a practical level, this approach represents *an integrated systemic approach* and proposes a *new audit model based on risk assessment* and *a methodological and procedural framework* associated for external audit. *The INTOSAI GOV 9100 Standard - Guidelines for Internal Control Standards for the Public Sector* (page 35) makes explicit reference to the work frame and to the documentation for the IT / IS audit provided by ISACA, ITGI (COBIT) and the INTOSAI IT Audit Committee. On the whole, it can be appreciated that there are significant changes in *the content and style of the auditing activity of the public institutions*, as a result of the impact and effects that the information technology generates both in terms of the *restructuring of the audited field* (the re-engineering of the informational systems and / or the informational systems) as well as in terms of the *actual approach of the audit* (the re-engineering of the audit architectures, of the methodological and procedural framework, changing the audit style).

According to the INTOSAI framework, the object of the *informational* systems audit can be focused on *programs, projects, informational systems or informational resources* created or used in the public institutions. These can be audited at *strategic, operational or application level*. The auditing can take place *throughout the life cycle of the system* or only at *certain stages*: *design, development, implementation, production, delivery, interoperability, access, use*. Auditing also includes assessing the compliance with the applicable law. In relation to the current state of affairs, the Romanian Court of Accounts should consider the impact that the shift towards a knowledge-based economy will have over the external audit and the qualitative substantive changes when approaching the external audit that this transition involves, by generalizing the implementation and the use of the electronic services for the entire public administration in Romania.

In the case of ***performance audits***, the IT systems can help improve the economy, efficiency and effectiveness of the governance programs (through the use of IT applications and e-government

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components) as well as deliver new, higher-quality public services, helping to reduce the costs of those that already exist under conditions of increased efficiency, security and control. The impact of ICT over the external public audit is reflected in *changes* at the *level of the audit activities* (expanding the computer-based auditing and implementing on-line auditing techniques, the continuous audit and the e-audit allow the transition from the individual audit, on-site, to the audit to distance, in a computer-based environment), *changes in auditors* (increasing the emphasis on the qualitative analysis part and implementing the results, but also increasing the response speed and the operability with which the results of the audit mission are provided and reported), *organizational changes* (the implementation of a new way of working, based on the ongoing collaboration of the auditors with the audited entities in order to achieve the convergence of actions and the achievement of the audit mission objectives) and *changes at the level of the informational audit instruments* (redesigning the traditional audit flows, developing and implementing functionalities related to interconnection and interoperability within a unitary, controlled architecture, of the informational systems and applications developed, exploited and maintained within the central and local public administration, the use of good practices in the field and the alignment with international standards concerning the informational systems auditing, creating and perfecting the legislative and regulatory framework that would allow the validation, implementation and use of the information technology procedures) (Funar , S., Rusu, V., 2014). Currently, IT systems are mainly seen as important components in all government programs (included in the e-government system). The evolution from this perspective has significant consequences for the performance audit in the field of information technology. The new audit model will also evolve into integrated solutions of various types of audit (financial, performance, IT, organizational and compliance, quality, and environmental), within some complex audit missions. Annex 5 to the ISSAI 3000 Standard addresses issues related to the relationship between performance audit and information technology, and Annex 5 of the ISSAI Standard 3000 highlights a number of important aspects for the performance audit in an IT environment, but it does not intend to replace the detailed guidelines which the ISAs may need to develop in order to assess the IT environment of the audited entities.

Implementing IT-based auditing architectures has a particular impact both on the organization and monitoring of the audit activity and on the audited entities, the most significant effects being: (a) providing real-time information; (b) timely detection of errors with the possibility of rapid correlation of information; (c) obtaining richer and more relevant information through automated investigations, and (d) optimizing audit

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procedures. Approaching the performance audit in an IT environment should involve the following interdependent processes:

• to obtain an understanding of the audited IT systems and to determine their significance for the performance audit objectives;

• to identify the extension of the IT system audit, required in order to achieve the performance audit objectives;

• to evaluate the environmental and application controls and to use an IT / IS specialist for the issues related to this field;

• to develop and use, when necessary, appropriate computer-assisted auditing techniques in order to facilitate the audit.

A performance audit in an IT environment should focus on the following activities (*The informatics systems audit - Manual*, Romanian Court of Accounts, 2012):

• to assess whether the IT systems contribute to enhancing the economy, efficiency and effectiveness of the program's objectives and its management, in particular in terms of planning, executing, monitoring and giving feedback of the program;

• to determine whether the results meet the established parameters in terms of quality, services and delivery costs;

• to identify any deficiencies in the informational and in the control of the computerized environment systems, as well as the resulted effect concerning performance (efficiency, economy and effectiveness);

• to compare the development and practices of maintaining the IT system of the audited entity, with recognized practices and standards in the field;

• to compare the strategic IT planning, risk management and project management of the audited entity, with practices and standards recognized in the field.

In the context of perfecting the communication methods with the public institutions and authorities and the need to ensure the flexibility of access to information and electronic services, it becomes opportune the design and implementation of an audit architecture designed for integrating into e-government systems. In this context, at the level of the EUROSAI-ITWG regional group, it is developed an audit framework for *e-government* systems elaborated through the *Auditing e-Government* project, initiated by INTOSAI-WGITA, a project coordinated by the *Office of the Auditor General* of Norway and having as members supreme audit institutions from England, USA, Canada, India and Sweden (*The audit of the informatics systems - Manual,* Romanian Court of Accounts, 2012). This project has taken into account the experiences of all supreme audit institutions that have conducted *e-government* audits. The Romanian Court of Accounts participated in the collection and

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capitalization of the valuable experiences obtained at the level of the supreme audit institutions, on the website *www.intosaiit.org*, being included the results of some IT audit missions carried out by the *Informatics Systems Audit Service* of the Court of Accounts of Romania:
1) Performance audit of the services of accessing and processing the online administrative forms, available in the National Electronic System of Romania. Infrastructures and IT Services, (2006);
2) The information system of Ministry of Public Finances for economic agents reports regarding their budgetary obligations, management of reimbursements and payment facilities grants. (2006);
3) The performance audit of the implementation and usage of the Computer Assisted Education System (CAES, 2004).

According to the assessment of *EUROSAI - IT WG working group*, the real problem facing the IT audit, including in Romania, is to *induce awareness and develop appropriate tools for the universe of information technology and the universe of auditing* (in the classical sense) *to become increasingly accessible to the involved actors* (managers or auditors). In this regard, the EUROSAI - IT WG aims to focus on a number of *main lines of action*, relevant for the situation and developments of auditing also in Romania:
a) audit of provision of *e-government, e-tendering, e-administration* and others; b) audit of government investment in hardware, software and human resources relative to the *promotion and effective use of information technology*;
c) developing SAIs capability to achieve strategic objectives by *adequately using information technologies* (e.g., relative to *internal management*: making audits with more efficient effects and development of required staff skills).

Specific actions of *information systems audit* from within the powers conferred to the Court of Accounts are conducted on the basis of an annual work program, approved by the Plenary Court, and it relates to the *IT/IS audit*, namely audit of *IT infrastructures and configurations*, and to *auditing of information systems, applications and services*. Through the audit reports of the information systems, the RCA provides the stakeholders (the Government, audited entities, interested institutions and citizens) with information on the performance of implementation and use of infrastructure based on the information technology and on the effects achieved in terms of work modernization by its computerization, as well as on the confidence that the system ensures to the users (public institutions, citizens). The *conceptual, methodological and procedural framework of the IT/IS audit* implemented by the Court of Accounts is harmonized with the views on audit in computerized environments formulated by the Special Working Groups *EUROSAI - IT WG*, which pays special attention to IT systems audit and to related problems and recommends that IT audit becomes an integral part of all the

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audits carried out by the SAIs. In the Court of Accounts, the information systems audit is a *multidisciplinary, cross-cutting, interdepartmental audit*.

The Court of Accounts carries out the following types of IT audits (*The informatics systems audit* - Manual, Romanian Court of Accounts, 2012):

• evaluating an IT system in order to provide reasonable assurance concerning its operation, necessary assurance, including the financial or performance missions audits to which the entity is subjected;

• evaluating the performance of implementing and using the informational systems;

• mixed audit missions, by integrating the three types of audit: *financial audit, performance audit and IT / IS audit*, which are going to be carried out in joint missions, depending on the objectives set;

• the audit of some developed and implemented informatics solutions to help prevent and combat corruption and tax evasion;

• the audit of the *e-government and e-administration* systems, as well as of the associated electronic services (*e-auction system, electronic online tax return*, etc.), in relation to the conditions provided by *Directive 2006/123 / EC*;

• evaluating an integrated IT / IS system and / or individual applications used as support for the decision-making (IT / IS systems used for recording, processing and obtaining results, operational and synthetic situations at all reporting levels) within the audited entity.

The general IT / IS audit approach is based on *assessing the risks and on results*. The audit can be performed *for the entire life cycle of programs, projects, systems and informational applications, or only for certain phases specified in the objectives*. Within the Romanian Court of Accounts, the following approaches have been promoted for the audit of systems based on the use of information technology (*The audit of the informatics systems - Manual*, Romanian Court of Accounts, 2012):

• evaluating the IT systems in order to provide a reasonable assurance concerning their operation, **necessary for the financial audit missions or for the performance audit** to which the entity is subjected (for example, *the IT audits carried out during the financial audit missions for ISPA, SAPARD, Pre-accession National Fund, in the period 2004-2005, and for ANV* in 2009);

• evaluating **the performance of implementing and using the informatics programs, projects, systems and applications** (for example, *audits of the performance of implementing and using the IT infrastructures developed at MCSI, ASSI, ANV, MEC, ANAF, CNPAS, MJ, CSM, ICCJ*, in the period 2004-2010);

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• **the audit of the e-government and e-administration systems and of the electronic services associated with these systems** (for example, the audit missions of the National Electronic System and of the related electronic services - *e-government and e-administration* components, the *e-auction system*, *the electronic service online forms*, *the online electronic fiscal declaration*, conducted during the period 2005-2008 at MCSI and ASSI). Under the conditions set out by *Directive 2006/123 / EC*, namely the obligation to associate Romania to the pan-European platform through *the unique contact point*, *it becomes imperative to audit the IT infrastructures for all public institutions in order to guarantee the quality of electronic information and services;*

• the audit **of some informatics solutions that contribute to preventing and combating corruption and tax evasion** (for example, *the Performance Audit of the Interoperability Framework between ANAF (The national anti-fraud association) and the other data owners regarding the taxpayers' assets and incomes in order to efficiently recover outstanding debts and prevent and combat the fiscal evasion, respectively ensuring the conditions for the full and timely collection of the state budget revenues (2009);* Cooperation within the EUROSAI_IT Working Group on the theme *"IT in auditing public revenue fraud"* (2007-2008); „*Relevance of IT in auditing public revenue fraud");*

• in perspective, **mixed audit missions**, **integrated solutions of the three types of audit** (the *financial audit, performance audit and IT / IS audit*), are going to be carried out in ***joint missions***, depending on the objectives set. We appreciate that such missions would be particularly useful for *programs or projects of extremely high values, highly complex developed at national level and with a very large economic and social impact*, such as the *e-Romania Strategy*.

Particularly important in the IT/IS audit within the Court of Accounts is the evaluation of ***IT systems related to public debt management***. The *objectives* of the audit mission in 2014 were to evaluate the operation of the general controls implemented within the information system on public debt and to evaluate the operation of application controls; the main recommendations envisaging *drafting and adopting a new computerization strategy of the MPF to be also applicable to the administration and management of public debt*; implementing a solution for a system architecture able to integrate the three applications that currently manage the public debt; continuous monitoring of IT system and applications performance; correct inventory of tasks of each employee within the departments that manage public debt; *data updating and restoring, where appropriate, the tests for risk assessment related to IT systems/applications serving the management of public debt*; the inclusion of modules that address issues related to administration through the information technologies of the issues related to public debt within the annual staff training program of the MPF.

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At the MFP level, the informatics system concerning managing the public debt is centered on three components / applications that function independently and are not integrated: the DMFAS application (Debt Management and Financial Analysis System) – The Financial Analysis and Public Debt Management System; The FTI STAR application (which is a treasury informatics system that provides the most complete data base concerning the financial assets and liabilities, and is used to manage the governmental public debt contracted internally and externally); The CREDLOC application (used by the Local Public Debt Service of the General Treasury and Public Debt Directorate - DGTD - as a database regarding the domestic internal public debt).

Conclusions

Audit of information technology/information systems (IT/IS) is a *distinct branch of the audit*, which includes techniques and methods of auditing the hardware, software and communications infrastructure, the software applications, the traditional and modern information systems, whether or not integrated and, more recently, the mobile applications and the web applications.

According to the assessment of *EUROSAI - IT WG working group*, the real problem facing the IT audit, including in Romania, is to *induce awareness and develop appropriate tools for the universe of information technology and the universe of auditing* (in the classical sense) *to become increasingly accessible to the involved actors* (managers or auditors).

In such a context, specific actions of *information systems audit* from within the powers conferred to the Court of Accounts are conducted on the basis of an annual work program, approved by the Plenary Court, and it relates to the *IT/IS audit*, namely audit of *IT infrastructures and configurations*, and to *auditing of information systems, applications and services*. Through the audit reports of the information systems, the RCA provides the stakeholders (the Government, audited entities, interested institutions and citizens) with information on the performance of implementation and use of infrastructure based on the information technology and on the effects achieved in terms of work modernization by its computerization, as well as on the confidence that the system ensures to the users (public institutions, citizens).

Particularly important in the IT/IS audit within the Court of Accounts is the evaluation of ***IT systems related to public debt management***.

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