Information Technology Audit in Georgia

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Abstract

With the development of information technology to carry out effectively their missions the largest part of a variety of organizations, government agencies and services have become dependent on computer systems. For each of the organization's activities the IT environment must be properly studied and evaluated in which they perform the basic activities. Therefore, in such environment it is necessary to make the information technology audit of IT systems operating reliability and functionality in order to obtain reasonable assurance. IT governance and information systems audit is imperative for successful governance.

This paper with a comprehensive literature review defines information technology audit, investigates how IT audit performs in the public sector of Georgia. Also it provides the thorough explanation of the experiences of the Georgian State Audit Office. The study analyses the challenges of the IT audit and point to future development directions of IT audit in the public sector.

Although considerable research exists on IT control and on internal auditing, there is limited study that refers to IT evaluation control activities in the public sector auditing. As such, the findings from this research would generate new conclusion to enrich the existing literature on IT related auditing. The findings also may improve the IT evaluation activities in the Georgian public sector.

Keywords: IT, Audit, Georgia, SAO

Introduction

Drastic changes in information technologies altering nature of internal control environment and audit for the last 20 years have led to the information revolution which has imposed an inevitable transformation on each and every aspect of our lives. Changes in traditionally decision-making process have fueled the need for timely, relevant, value added, coherent and accurate information and in turn increased the dependency on information

technologies. Likewise, the public sector organizations have kept pace with digital revolution in order to meet the growing expectations for high quality, easiness, and transparency in public services (Kayrak, 2012).

Complexity in information technology architectures and infrastructures, and an increasing need for executives to verify and secure value generation processes in private as well as public organizations, call for an increasing awareness and understanding of corporate governance in general and IT governance in particular. The Information Technology Governance Institute defines IT governance as "the leadership, organizational structures, and processes that ensure that the enterprise's IT sustains and extends the enterprise's strategies and objectives" (ITGI 2003). IT governance may also be defined as specifying the decision rights and accountability frameworks to encourage desirable behavior in using IT (Weill & Ross 2004).

The critical element which is the most important for survival and success of the organization is to effectively manage information and communication technology (ICT). IT audit is the process of gathering and evaluating evidence based on which one can evaluate the performance of IT systems, i.e. to determine whether the operation of information systems in the function of preserving the property and maintain data integrity. It is also necessary to determine whether IS enables effective achievement of business objectives and whether system resources are used in an effective and efficient manner. IT audit today represents a modern and advisory function, "right hand" that helps the management on IT governance (Radonovic et al, 2010).

Problem statement

The migration of e-business tools and practices into government organizations is changing the way the citizens and governments interact. Governments are transforming themselves as they increasingly move to delivering information and services electronically, this is also the case in Georgia. As a result, IT auditors are needed to provide assurance that systems are adequately controlled, secured and functioning as intended (Petterson, 2005).

Information technology audit has become an increasingly important issue in recent years. The increased role of information technology in society and organizations, has increased the demand for IT audit. The purpose of this paper is to identify the role and necessity of IT audit in public sector organizations. Also to assess weaknesses and strengths of IT audit function and give some recommendation to improve IT audit performance, which will lead organizations to have much more effectively and efficiently in the

exercise of their activity and to reduce as many risks as possible which they are faced with on a sample of the Georgian public sector.

The objective of this paper is to describe IT audit process with a comprehensive literature review and conduct an information technology study on public sector audit organizations in Georgia. Even though it has been widely accepted that a little study has been done about public sector IT audit in the transition economy of Georgia. Moreover we could find only a few examples which examine a technological assessment of public sector entities in Georgia.

Information system audit necessity

The competitive position of a business or even a mere existence of a business organization may be at stake, for instance, by cost increasing or by mistakes caused by taking inappropriate decisions because the information systems were inadequately shaped or they are of low quality. That is why, when shaping an information system control and audit function, it is necessary to cover all its goals, tasks, functions, (data collection, processing, and storage; preparation, analysis, management and distribution of information) and all components (hardware, software, data-ware, net-ware) (Spremic, 2005).

In general, there are seven important reasons for setting up the information system control and audit function (Weber, 1999, Panian, 2001):

1. Consequences and organizational costs caused by a loss of information;
2. Possibility or costs of making wrong decisions due to incorrect information or low-quality information systems;
3. Costs of the information equipment misuse due to non-existence or inefficiency of the information or computer system controls;
4. Value of individual information system components (hardware, software, data ware, net ware);
5. Costs of mistakes caused by PC and various equipments;
6. Necessity of keeping privacy,
7. Necessity of a controlled improvement of the use of information equipment.

Prevalent use of information technology in both of the private and public sector has brought not only opportunities but also various challenges in terms of security, confidentiality, reliability and integrity of information. Hence, it has become compulsory to design new audit procedures in order for successful implementation of audits (Kayrak, 2014).

Technology, as being identified by Porter (1998), is one of the five forces that drive industry competition.

Since the efficiency, effectiveness, and a great deal the successfulness of all business activities depend on the functioning of the information system, a due attention should be paid to the issue regarding its systematic control and auditing. The information system auditing is an organizational function that enables an independent and objective testing of function, goals, and parts of the information system in order to get certain evidences that can be considered independently or that can provide a good basis for other kinds of audit. The goal of the information system audit is to carry out a systematic, thorough, and careful examination of the controls within the information system, to warn about possible failures and risks, and thus examine the quality of the company's information system (Spremic, 2005).

Challenge

The IT developments in government have opened new challenges for auditing professions. It is sustained that economies highly depend on a radical information technologic oriented restructuration. As importance of information technology has been realized by more and more researchers, the role of IT in public sector government process has become an important subject. This increasing importance results in the rise of IT audits. Technology audits are essential tools for supporting IT, by getting an understanding of the technological needs of organizations.

The impact of information technology (IT) on business has grown exponentially in recent years and it has changed the audit process and has resulted in opportunities and challenges for auditors. The audit profession is rapidly advancing in response to changes in its environment (Solomon and Trotman, 2003). As IT changes occur more quickly, auditors must keep pace with emerging technological changes and their impact on their organization's data processing system, as well as their own audit procedures (Rezaee and Reinstein, 1998). As the usage of IT in the organizations is increasingly becoming more complex, auditors must embrace technology, understand it, and be able to audit effectively the processes and use it as an audit tool (Hass, Abdolmohammadi and Burnaby, 2006).

IT is an increasingly powerful tool for improving the delivery of government services. IT and the internet in particular have opened new possibilities for the government and the governed, just as it has for the businesses and its customers (Hazman and Maniam, 2004; Moon, 2002). Over the past decade many governments have planned and implemented programs projected to start on the government into the digital land, this also applies for Georgia. Governments of both developed and developing countries have embraced IT to improve the quality of public services, increase public access to information and to energies more participation in

public affairs (Becker, 1998; Moon, 2002). As computer technology has become sophisticated, government organizations have become progressively more reliant on computerized information systems (CIS) to perform their operations and to process, maintain, and report essential information. Besides, the size and intricacy of government task and the command for timely and accurate information necessitate the use of IT in public services (Farida Binti Veerankutty, 2010).

This Paper focus on the areas of IT related to auditing in the Georgian public sector. The scope of the study would be the organizations that are involved in the IT related auditing, represented by the State Audit Office of Georgia and the internal audit departments of ministries and local authorities. The structure of the paper is as follows. The Second section reviews pertinent literature related to the IT Audit definition and types of IT audit. The Third section describes the current government audit environment in Georgian public sector, and the fourth section evaluates the alternatives how to develop IT Audit in the Georgian public sector, analyses their strengths and weaknesses, possibilities and risks, and also surveys the results. The fifth section concludes the paper and draws up a set of recommendations to further development of IT audit in Georgian public sector.

Literature review

Definition of informatiom technology audit

To improve the management of IT in accordance with regulatory requirements, organizations are using best practice frameworks to facilitate the work. One of these frameworks for IT governance is COBIT, which provides guidelines on what can be done in an organization in terms of control activities, measurement and documentation of processes and operations. COBIT (Control Objectives for Information and Related Technologies) is the worldwide accepted standard which prescribes areas and individual controls for IT governance, informatics and related IT processes (Radonovic et al, 2010).

IT Audit - This is the computer hardware, networking, software and office equipment testing service. IT audit allows to efficiently eliminate the problems and shortcomings. It is necessary for further development planning of infrastructure (Weber, 1999).

The role currently being played by Information and Communication Technology (ICT) (or Information Technology (IT) as these two terms are used in literature interchangeably) is insuring audit effectiveness in terms of the accuracy, timeliness and integrity of such report that in turn strengthens the credibility attached to the financial information being presented to wide range of users (Omoteso, 2013).

IT Auditing is the process of collecting and evaluating evidence to determine whether a computer system has been designed to maintain data integrity, safeguard assets, allows organizational goals to be achieved effectively, and uses resources efficiently (Veerankutty, 2010).

As a rule, the development of Georgian organizations is characterized by the information systems implementation in the different areas of activity. The implementation of this or that technology usually arranges the actual tasks at the developing moments.

After some time, a lot of organizations realize that their IT portfolio includes a variety of expensive technology solutions. Each of them covers only a portion of the organization's objectives. It is quite difficult to integrate and manage these technologies. The result of IT audit is to reveal problems in the following areas:

- IT systems compliance with the company's business strategy;
- Status of IT architecture and deviations from necessary standards;
- State of the systems used in a company according to the following factors: functionality, reliability, usability, technology, innovation, documentation of the systems and the general quality.

At the same time, a new audit direction is aimed to increase the results of financial, compliance and performance audits. IT audit can assess information systems environment of the different government agencies and companies, which has an impact on the organization's financial data and accounting records for the correct reflection reliability. The audit will make possible to assess the level of IT system security compliance with the regulatory legislation. In addition, an information-technology audit provides the IT system operation efficiency, effectiveness and productivity.

IT audit is responsible for the development of e-governance related risks. In particular, the risks moved from the paper to the slate electronic systems and at the same time they increased opportunities for fraud, information theft, distortion and distributing (information confidentiality and integrity of the country).

The new auditing approach provides identification of information security, data integrity, and fraud risk in the information systems and also provides the relevant recommendations for their prevention, also with this innovative audit approach will be possible to increase the scope of audit.

Various types of it audit:

To summarize the literature, the following basic types of IT audit can be grouped:

Complex IT audit - the complex information technology audit performs the most effective method for identifying problems for all the key stations of the IT infrastructure. It provides an ability to assess the state of

the IT systems and the elimination of a specific plan form for eradicate of the existing problems, with maximum protection and preservation of actuated investments - it means that the plan will not be a call to ensure that "everything should be destroyed and be built again", but it will be a possiblity a smooth transition from existed to the desired.

Hardware audit - it is a complex of measures, from we recieve report about quantitative and qualitative characteristics of the hardware of the organization's IT infrastructure.

Security audit – this is the analysis of information security systems in accordance with international standards. The audit is designed to increase data protection and minimizing risks associated with the operation of an information system. This goal can be achieved by analyzing the parameters of the IT infrastructure, such as the influence of the human factor, safety, access to the system, confidential data transfer and storage systems for sustainability.

Software audit - this is analysis software products used in organization, which purpose is to assess efficiency, updates and license purity grades of its use. The analysis of software products used in the organization enables the leadership of organization to achieve maximum effect in the use of software products, also avoid license violations, and related negative consequences.

IT audit is required, when the company need to implement or upgrade the computer infrastructure or when the staff changes, reorganization, also when is actual effectively usage of technical resources.

Separate investigation of the IT audit allows significantly reduce infrastructure operating costs. We can distinguish the following general audit results:

- Internet traffic consumption;
- Printers Park optimization;
- Increase employee efficiency with monitoring and control mechanisms;
- Efficiently use of IT personnel time and increase qualification.

All this will allow us to reduce the infrastructure maintenance and operation costs by 30-40%.

Generally IT audit services include:

1. *Security audit* is a security risk assessment. The audit process also includes interviews with key personnel, assessment of weaknesses, identification of security policy and management, and also IT assets examination. Generally, security audit is focused on the successful operation of safety systems.

2. *Infrastructure audit* mainly is consulting type. It is necessary to be assessed the safety of the existing technologies and product and legality, before the new information technologies will be purchased.

Current government audit environment in Georgia

Effective management of public resources is the major challenge for a country. In response to this challenge the State Audit Office of Georgia with its research and analytical activities supports the Parliament with controling of public finance management.

The State Audit Office was established in 2012 and is the legal successor of the Chamber of Control. SAO is organizationally, financially and functionally an independent organization. Within the mandate given to it, SAO supports the Parliament by improving the government and implementation activities to increase the country's benefit. State Audit Office's main purpose is to support the improvement of public services and better management of public resources in accordance with the legality, efficiency and accountability principles. The State Audit Office is based on the following core of values: independence, professionalism, reliability.

SAO's audit activities are focused on the detection and prevention of systemic deficiencies in the public finances service management and giving appropriate recommendations for their prevention, which should be reflected in the statements and reports prepared for the Parliament.

The SAO mission

State Audit Office's mission is to support the continuous improvement of delivering public services and enhance legality, also keeping effectiveness and accountability when using public resources. In addition the office supports to deliver consulting and audit services to the public sector, to provide professional certification programs for auditors in the public sector and to reinforce knowledge and experience sharing in different fields related to the management of public finances.

SAO's aim is to support the Parliament in overseeing the activities of the government, as well as to strengthen accountability and transparency of the public sector and to ensure efficient and effective management of public finances.

The SAO role and mandate

The State Audit Office provides independent assurance to the Parliament that public resources are used efficiently and effectively in accordance with the relevant legislative requirements and interests of the taxpayers. Through reporting to the Parliament on the operations of public

entities, the SAO fosters the accountability of the government to the Parliament and the public.

Based on its audit work, the SAO provides the government with the recommendations intended to point out to the opportunities for improvement in managing public finances, particularly in delivering public value and improving financial reporting. Furthermore, the SAO provides recommendations to the Parliament of Georgia and the executive branch on legislative acts related to the state programs, public finance management reform process and other relevant issues.

In addition, as an important player into the implementation process of the national anticorruption policy, the State Audit Office facilitates the establishment of corruption-free public management system.

As established by the existing legislative framework, the audit mandate of the State Audit Office covers the operations of the central government, local self-governing entities, autonomous republics, State-owned Enterprises (SOEs), Legal Entities of Public Law (LEPLs) and other public institutions. It is noteworthy, that according to 2011 legislative amendments, the statutory obligations of the SAO included the new function of the monitoring of political parties' financing.

In accordance with the International Standards of Supreme Audit Institutions (ISSAI) the State Audit Office (SAO) is the Supreme Audit Institution in Georgia, which carries out the supervision of institutions provided by the law. In general, the audit activities include financial, compliance, performance, and environmental audits of information technology.

State institutions or state-owned organizations in the use of information technology are in the increased pace during recent years. On the one hand, this helps organizations to increase efficiency, to achieve goals more efficiently and productively with a few human resources. At the same time, the development of electronic-services promotes saving of operating expenses and time, increasing competition and transparency. On the other hand, the use of IT is accompanied by the risks related to security, confidentiality, integrity and availability. Thus, the adequate control and supervision systems of the implementation of information are necessary.

The State Audit Office, as the oversight institution, is authorized to evaluate the information systems with the legal requirements. At the same time, the duty of the Audit office is to evaluate information systems controls related with risks and to make recommendations in order to reduce these risks. At this point, the State Audit Office is taking the first steps in the implementation and development of information technology audit. One of the main purposes of the State Audit Office's (SAO) is to provide management oversight of public finances and contribute to its improvement.

Given the current situation, when the state structures with rapid temp deploy and use information technologies, the State Audit Office is facing to the new challenges. Traditionally, the information was stored on a paper and, accordingly, the auditors checked the physical trainers of information and physical assets, but in today's environment information is stored in a digital form in a virtual environment. Therefore, fundamentally it is new audit approach, which implies the introduction of information technology audit.

The intensive development of technology and the introduction of e-governance in the public sector increased information and communication security, computer fraud and other technological risks. Accordingly, for the State Audit Office's audit activities are necessary to properly examine and evaluate the information and technological environment in which public agencies implement basic activities.

As Weber explains, the Information Systems Audit aims "to obtain reasonable assurance that the information system provides asset security, data integrity, use resources productively and efficiently to achieve the goals" (Weber, 1999).

To manage the supervision of the information systems of the public bodies, it is needed to perform the institutional, organizational and professional framework for IT audit. The Office of the State Treasury of Georgia and public procurement information systems are the examples of strategic and critical importance of e-services. It should be mentioned that it is planned to move on single electronic switch workflow in public structures, which means that all public documents will have a digital form. Hence, it will increase the importance of information systems quality for each public institution.

It is important to assess the effectiveness of e-services and information systems. In general, any major subsystem is designed to effectively fulfill its obligations. Accordingly, when the subsystem's role continues to grow, it is necessary to assess its effectiveness.

From the outset, it is necessary to properly define the architecture, planning and analysis of the developing life cycle assessment and prospects. The issue is not only to ensure the effectiveness of information systems, but also to use public funds productively.

Within supreme audit institutions there are different approaches to the implementation and use of IT audit. There are basically two approaches: IT audit as one face of the audit, and IT audit as Performance Audit’s component. Accordingly, there are different methods of implementation and development of IT audit. However, on the other hand, in spite of the institutional approach, the information technology audit objective and its methodology is identical. There are international standards (ISSAI, ISACA)

with the audit process, guided by IT auditors. Therefore, we can say that at this stage it should not give an essential impart to an institutional approach.

Existing challenges

The SAO strategy is driven by the key issues and major changes faced by the public sector. Existing trends and ongoing reform process in the public sector poses a significant challenge to the work of the State Audit Office as well as that of the legislative and executive branches of the government and put further emphasis on SAO's role in this process.

In addition, government's commitment to the introduction of electronic management systems - the electronic payment processing systems for the spending agencies, electronic management systems for the public debt and loans, electronic databases for the management of social benefits etc. represents an important challenge to the SAO audit work. In response to the noted changes in the management of public resources, the SAO intends to introduce and develop IT auditing within the framework of its audit work.

Alternatives of how to develop it audit in Georgia

The process of developing IT Audit service is difficult and sometimes it is impossible to use foreign experience, proven implementation methods, because each case is characterized by a large number of heterogeneous factors. To the external factors one of the important facts is added that in the country there is actually a shortage of IT auditors. Therefore, the problem is to select a skilled instructor of the information technology audit, who would take care of IT auditors education and the frame of a relevant vocational system.

In the current situation, when the technological challenges are facing to the State Audit Office, it is difficult to develop alternatives that will bring a guaranteed outcome and at the same time, the resources would be justified by the higher management. In addition, alternative development and implementation is complicated by the need of effectiveness in doubtful information systems audit, which is caused by a low level of trust in society and knowledge.

There are considered alternatives to solve the problem, as following: (Shavgulidze, 2014):

1. Alternative A **-** Activities in the process of learning (Learning by Doing) approved in the world and is quite a common technique that can be used in the State Audit Office to the development and implementation IT audit. This approach generally involves working with the accumulation of experience, and the necessary knowledge.

2. Alternative B **-** Invite experienced IT auditors. For the development of IT audit in State Audit Office can be considered in another

way - inviting experienced private IT auditors. Possible to offer a job to the auditors from private auditing companies and interest them in the public service. It is also possible to invite a variety of commercial information technology auditors from the organization's internal audit departments (for example, banks, e-service provider commercial companies and etc.) and data exchange agency.

3. Alternative C - INTOSAI Development Initiative (IDI). The three-year grant program, which is intended for the financing of the supreme audit institutions. With a focus on the introduction, institutional, organizational, and of professional development opportunities of the international standards of the Supreme Audit Institutions (ISSAI) in developing countries.

4. Alternative A & C. In the State Audit Office invited expert-auditors will take care of the professional development and formation of beginner IT auditors in the scope of grant program. Then they will provide further supervision and quality control of the pilot audits.

5. Alternatives B & C. Invited experts in the scope of grant program, will cooperate with the State Audit Office IT auditors, the will conduct the pilot audits and will care on SAS's institutional development.

Each alternative has its advantages and disadvantages (Figure 1,Figure 2,Figure 3):

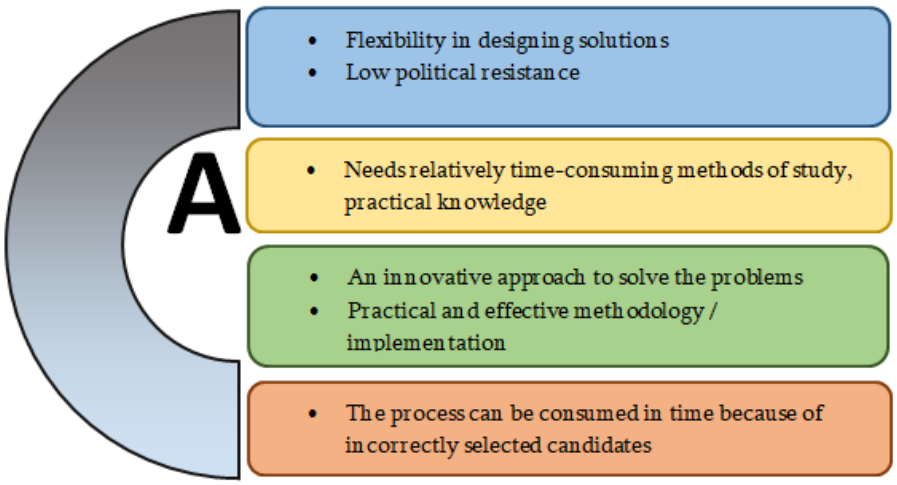


Figure 1: Alternatives' strengths, weaknesses, possibilities, risks

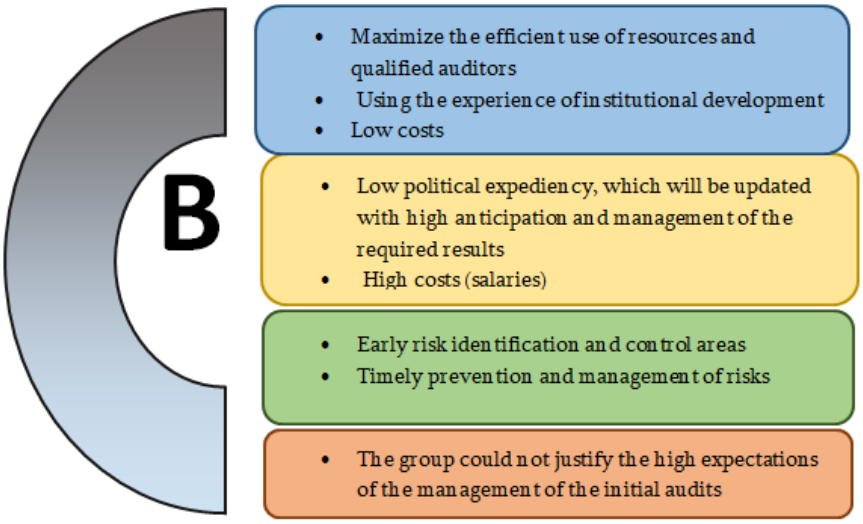


Figure 2: Alternatives' strengths, weaknesses, possibilities, risks

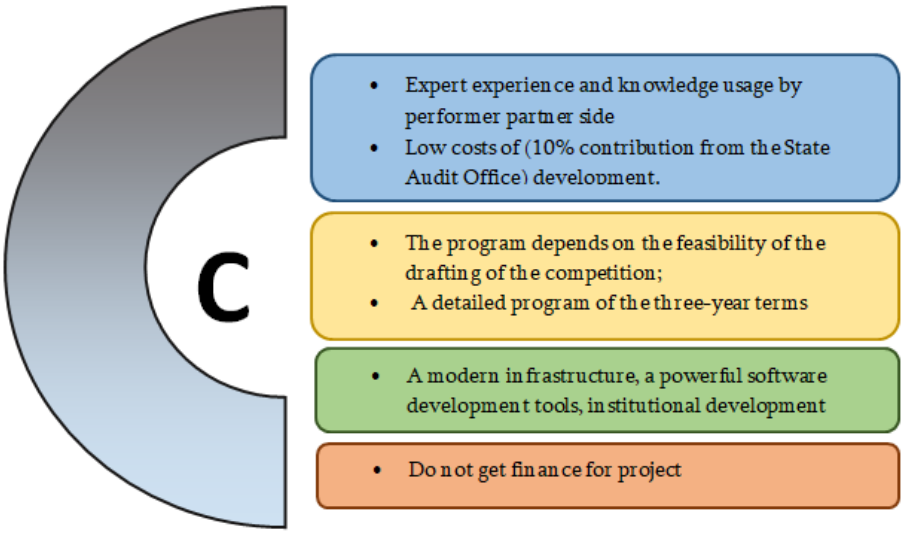
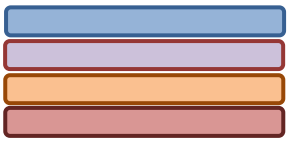


Figure 3: Alternatives' strengths, weaknesses, possibilities, risks

Strengths
Weakness
Possibilities
Risks



Within these alternatives the fourth alternative (A&C) stands out with low costs and at the same time with high-efficiency. Accordingly, from these alternatives the preference is given to it. To implement the preferred alternative, it is recommended to take the following steps:

✓ It is important to properly select the candidates, which means really assess their professional skills, personal characteristics and motivations;

✓ It is needed to be timely delivered training methodology to the candidats, and they shoul be involved in ongoing financial and performance audits;

✓ It is recommended the pilot group to be involved in the innovative projects announced by various donors and organizations, for improve qualification and at the same time to get additional resources.

The Law about “Public Internal Financial Control" provides for 5 types of audit. At this stage, the country mainly is carried out on financial and compliance audit. The facing challenges are the system, performance and IT audit. The Ministry of Education and Science of Georgia for the first time, in the space of the public governance has started IT audit project organized by the Ministry of Finance Harmonization Center and the German Society for International Cooperation (GIZ). The pilot audit started in November 2013 and ended in January 2014. IT audit process used COBIT international standard.

One of the main tasks of IT audit is to inform the organizations about organization programming and organization applications to make rational and economical decisions on the basis of this information for development their services.

Information technology audit and its development have a critical importance not only for the development of the State Audit Institution, but also for other public sector organizations across the country. Supervision and recommendations will contribute to the security of subordinate information systems, streamline and optimization in the state organizations.

Strategic plan of information technology audit development for 2014-2017

As we have mentioned above the development of information technology audit is the main challenge for the State Audit Office. This type of audit provides a reasonable assurance that information systems and management controls within an information technology infrastructure are safeguarding assets, maintaining data integrity, and operating effectively to achieve the organization's goals or objectives. IT audits will enable to analyze the existing information technology infrastructure, assess the information systems used in public sector entities, identify significant control deficiencies with minimum available resources and thus contribute to the

improvement of the management of public finances through the relevant recommendations.

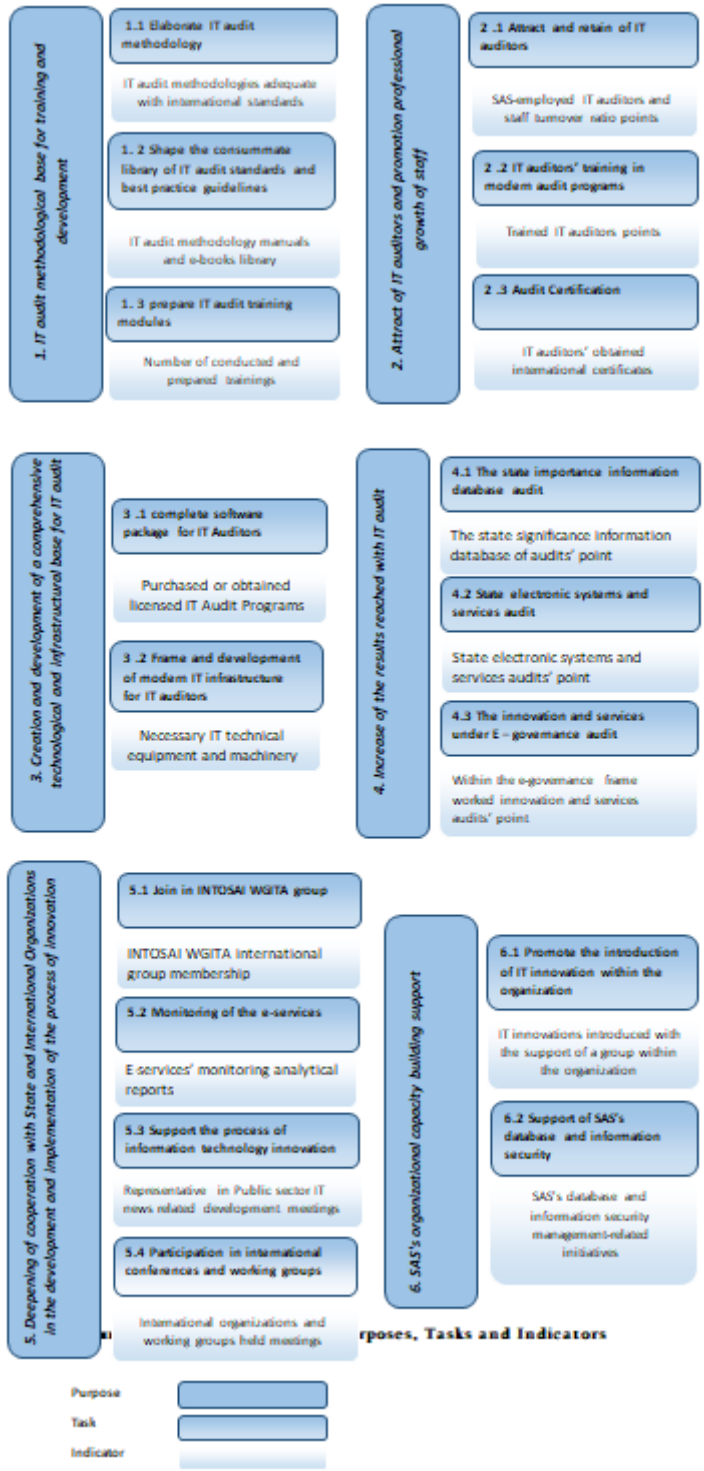
In response to modern challenges, in 2012 the information technology (IT) strategic development plan was prepared and a coordination group was formed that provides both audit and the development of methodological base as well. The strategic plan of the State Audit Office (SAO) describes SAO's proposed goals and objectives for supporting the Parliament and the nation for the fiscal years 2014 through 2017 considering the key issues and major changes faced by the public sector. Over the period of this strategic plan, the SAO seeks to:

- Maximize the impact of their audit work;
- Enhance SAO's role to foster continuous improvement in the management of public resources;
- Establish the SAO as a model organization with highly qualified staff, modern management systems and processes that will together underpin the high quality, timeliness and reliability of the SAO work.

The SAO IT strategic development plan for the fiscal years 2014 through 2017 has been developed based on the consultations with the Parliament, international donors, partner organizations and other relevant stakeholders.

In light of the technological challenges in the field of public finance and IT audit the State Audit Office has established several strategic goals for the fiscal years 2014 through 2017 (Figure 4):

- IT audit methodological base for training and development;
- Increase of the results reached with IT audit;
- Attraction of IT auditors and promotion professional growth of staff;
- Creation and development of a comprehensive technological and infrastructural base for IT audit;
- Deepening of cooperation with State and International Organizations in the development and implementation of the process of innovation;
- SAO's organizational capacity building support.


1. IT audit methodological base for training and development
1.1 Elaborate IT audit methodology
IT audit methodologies adequate with international standards
1. 2 Shape the consummate library of IT audit standards and best practice guidelines
IT audit methodology manuals and e-books library
1. 3 prepare IT audit training modules
Number of conducted and prepared trainings
2. Attract of IT auditors and promotion professional growth of staff
2 .1 Attract and retain of IT auditors
SAS-employed IT auditors and staff turnover ratio points
2 .2 IT auditors' training in modern audit programs
Trained IT auditors points
2 .3 Audit Certification
IT auditors' obtained international certificates
3. Creation and development of a comprehensive technological and infrastructural base for IT audit
3 .1 complete software package for IT Auditors
Purchased or obtained licensed IT Audit Programs
3 .2 Frame and development of modern IT infrastructure for IT auditors
Necessary IT technical equipment and machinery
4. Increase of the results reached with IT audit
4.1 The state importance information database audit
The state significance information database of audits' point
4.2 State electronic systems and services audit
State electronic systems and services audits' point
4.3 The innovation and services under E – governance audit
Within the e-governance frame worked innovation and services audits' point
5. Deepening of cooperation with State and International Organizations in the development and implementation of the process of innovation
5.1 Join in INTOSAI WGITA group
INTOSAI WGITA International group membership
5.2 Monitoring of the e-services
E services' monitoring analytical reports
5.3 Support the process of information technology innovation
Representative in Public sector IT news related development meetings
5.4 Participation in international conferences and working groups
International organizations and working groups held meetings
6. SAS's organizational capacity building support
6.1 Promote the introduction of IT innovation within the organization
IT innovations introduced with the support of a group within the organization
6.2 Support of SAS's database and information security
SAS's database and information security management-related initiatives
rposes, Tasks and Indicators
Purpose
Task
Indicator

Survey result

The basic research methodology represents both general scientific and economic research methods, namely, functional analysis and synthesis, abstraction, comparison, the systematic and logical approaches, survey, assessment, economic-mathematical, economic-statistical and other.

For assessment the real situation and for underlying the necessity of Information Technology Audit the survey within the public sector institution's internal audit departments was carried out. Sixty internal auditors were interviewed. Based on their answers it is possible to assess the real situation in the Georgian public sector. Surveyed Auditors 31% are between 20-29 years, 31% are 30-39 years, less than 20% are 40-49 years, and about 20% are more than 50 years old. About 80% of respondents' level of knowledge in information technologies is either average. The majority has not taken any training or a course in Information Technology. As the survey has shown 80-100% of organizations, audited by public sector auditors, use modern electronic programs. However, none of the auditors use a licensed audit program (COBIT or CAAT) within the audit process. This is likely due to the fact that, as auditors denote, the material has to be audited has electronic as well printed form. Most of the public auditors agree the opinion that the relatively young staff (employees) is more familiar with informational technology. But also they strongly argue that age is not an obstacle to a better understanding of information technology in the learning process. Almost 100% of the public sector auditors believe that the internal audit departments of the public sector institutions need the development and improvement as qualification as well structural point of view in terms of information technology. The respondents also strongly agree with the opinion that if in the internal audit departments there is no person (staff) who would have qualification to perform information technology audit, instead of convening an IT specialist, to be raised the qualification it is better to attend on several trainings or courses of existed public sector auditors.

I think uncertainty in information technology is creating a threat in terms of objectivity and independence. Also in my opinion this uncertainty in IT inevitably leads to misuse of the human resources as well the time resources. Though, between the auditors the variety of opinions in this direction emerged.

Conclusion

The IT audit performance and development has a key role in the country's management system. The IT audit is detected as an audit form (type) in the public sector which evaluates and improves risk management coherent with information technology proper operation, information safety and etc. To control and governance process effectively is directed towards

the full implementation of the IT audit. While IT audit will be implemented completely and according to the international standards in the public sector, audit organizations will be able to reduce the risks to a minimum, which will achieve the goals and the organization's valuable resources management systems, processes and people-related processes in an efficient and rational planning-implementation.

The contributions to this study are particularly interesting given the fact that there are limited studies about Information Technology Audit necessity in Georgia and given the assumption that the climate in and around ERP environments is changing.

The article deals with problems of IT audit necessity and performance in Georgia. Particularly the accent is done on the problems of the public sector IT audit. The issue has been selected for its relevance and importance, because developing this field in our country requires a number of ways to solve problems.

Information Technology (IT) has become important for the effective and efficient provision of services within the public and private sectors. Now auditing in a computerized environment is the norm and, while certain specialist skills are necessary when auditing in such circumstances, not all of the work demands a significant degree of computer knowledge. All auditors must be aware of the scope of IT within their organization and how it is structured and managed.

IT audit as a discipline is maturing. To compete in this new and threatening environment, it needs to standardize, automate and speed up its analysis and reporting. It has to become more economic and efficient by reducing costs and using tools that improve the effectiveness and reliability of its output and its compliance and control (Radonovic et al, 2010).

In a global world in which the waves of globalization have forced the introduction of strategies to enhance information technologies, IT seems to have the potential to significantly enhance competitiveness of organizations. Accordingly, specific tools for assessing information technology capability such as information technology audit becomes an issue of concern for academics, politicians and practitioners.

The organizational position of the information systems audit service may have great influence on its efficiency and effectiveness. If the information systems audit service is within the IT division/section, it mostly means a lower position in the organizational hierarchy but also the availability of, very often, poor (or scarce) knowledge in this field. The IT division/section position has a significant effect on the information business resources management level. If the information systems audit service is within the audit department/division, its organizational position is essentially better but in view of the lack of IT knowledge, its efficiency is questionable.

Actually, carrying out of the information systems auditing often requires narrowly specialized IT knowledge, which the auditors usually do not have. That is why one should expect auditors to be more specialized, i.e. their permanent acquisition of IT knowledge, skills, and techniques in order to provide an efficient information systems auditing. Consequently, there is a repeated necessity for a permanent education of auditors in the area of information systems, either within the continuous education program for the certification of information system auditors or in the form of target seminars, trainings or workshops (Spremic, 2005).

Mainly IT Audit is the complex monitoring system of IT infrastructure functioning. IT audit will allow the existing network equipment, software and services of the public organizations push into one system and create a single image of the current infrastructure. In a current developing environment there is necessity of qualified and complex assessment and monitoring systems. At this stage the departments of public organizations only use the elementary and basic systems of monitoring.

You will agree that just installation of software and network systems is not enough for the organization's successful and efficient IT infrastructure. It is necessary in order to analyze what is going on in these parts any time and any interim. For good governance it is important to know exactly what is happening in the organization's programs, services and network devices direction. System monitoring, information technology audit is useful because, only in this case is possible identify the weaknesses and with the elimination of deficiencies save the valuable resources of staff time.

Generally in Georgia there is lack of qualified staff. Therefore qualified candidates must be grown up from the university, only courses and seminars are not enough. The specialist should have the basic knowledge. In this case the most important thing is that government and private business get involved in this process and encourage to the creation of specialized technological universities and faculties. It is also necessary that state institutions take care of employees' professional development, finance the participation of employees in a course or traning.

On 5th of February, 2015 the World Bank and the State Audit Office (SAS) signed a 500,000 US dollar grant agreement on the project, "the development of information technologies audit in the State Audit Office". In accordance with undertaken commitment to the World Bank the State Audit Office:

- In 2015-2017 years should prepare at least 10 IT auditors with the qualification of international standards;
- Provide IT auditors maintaining, as there is a shortage of specialists at the local market and there is high risks associated with the brain drain;

- IT auditors should provide with the suitable material and technical facilities.

The main task is to develop International Standards corresponding IT audit in the State Audit Office. This constitutes the answer of the State Audit Office to implementation of e-governance related risks in the public sector. The project includes three components: (1) the implementation of the information system for information technology audit in the State Audit Office, (2) capacity building of the State Audit Office's IT auditors and (3) project management.

Introduction and development of IT audit will improve the work of the State Audit Office, because it will increase the size and scope of the audit, will be improved audit quality, resource-saving and will improve the effectiveness of the audit. All of the above mentioned will contribute to the improvement of the State Audit Office audit work results and therefore better management of public finances.

Citizens' personal and business information contained into united databases and networks produced another new challenge in information security. With the disclosure and falling into the hands of outsider individuals of this information, still all this data is staying as a risking challenge of destruction in case of disaster. The State Audit Office with the issued recommendations on the basis of IT audit will contribute to the forming of more secure environment for data storage and sharing in the public sector.

IT adequacy and system safety protection checking and evaluating of the system for providing the confidentiality, integrity, and accessability to information. This kind of audit and appropriate recommendations give an opportunity to the institutions that information technology implemented in practice is not dangerous and adversely affective to the organization's activity.

The analysis and studies implemented for assessing real situations in the public sector (the outer-interviewed staff of the State Audit Office, ministries, public services, municipalities and other) have shown that the public sector needs development and improvement of the IT audit, both the qualification and performance point of view. It is necessary to develop IT audit in the public sector.

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